FOUNDED IN 1856

RAILWAY AGE

FEBRUARY 5, 1949

The Pioneer of a New Era

NOVEMBER 11, 1934, marked the dawn of a new and glorious era in railroading. On that date, Burlington's PIONEER ZEPHYR was placed in regular daily service between Kansas City, Omaha and Lincoln — an important forward step in American transportation. Powered by a General Motors Diesel, the PIONEER ZEPHYR was America's *first* Diesel-powered streamlined train. It was the forerunner of such famous Burlington trains as the DENVER ZEPHYR, shown on the right.

Today, in its 100th year of service, the Burlington has more than *300* General Motors Diesel locomotive units at work on its 11,000 miles of line. They speed passengers on their way — handle heavy freight trains with impressive "on time" records — and expedite handling in switch yards — all with outstanding economy of operation and maintenance.

Electro-Motive, as the pioneer builder of Diesel locomotives, salutes the Burlington, pioneer in the field of Diesel railroading, on its 100th anniversary.

GENERAL MOTORS LOCOMOTIVES

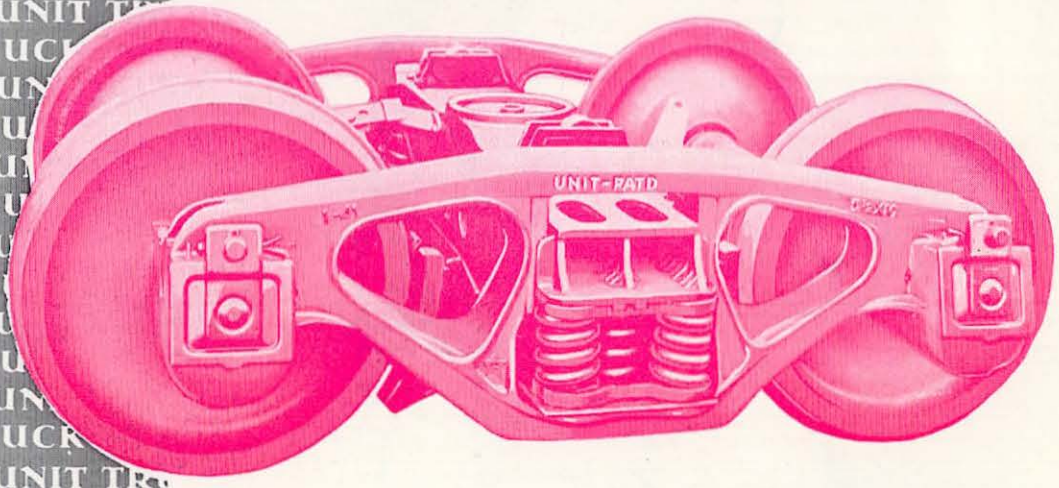
ELECTRO-MOTIVE

DIVISION OF GENERAL MOTORS • LA GRANGE, ILL.

Home of the Diesel Locomotive

UNIT TRUCK

dominates the picture wherever modern freight cars are built . . . . .



Congratulations

Burlington Route

Everywhere West

Burlington Route

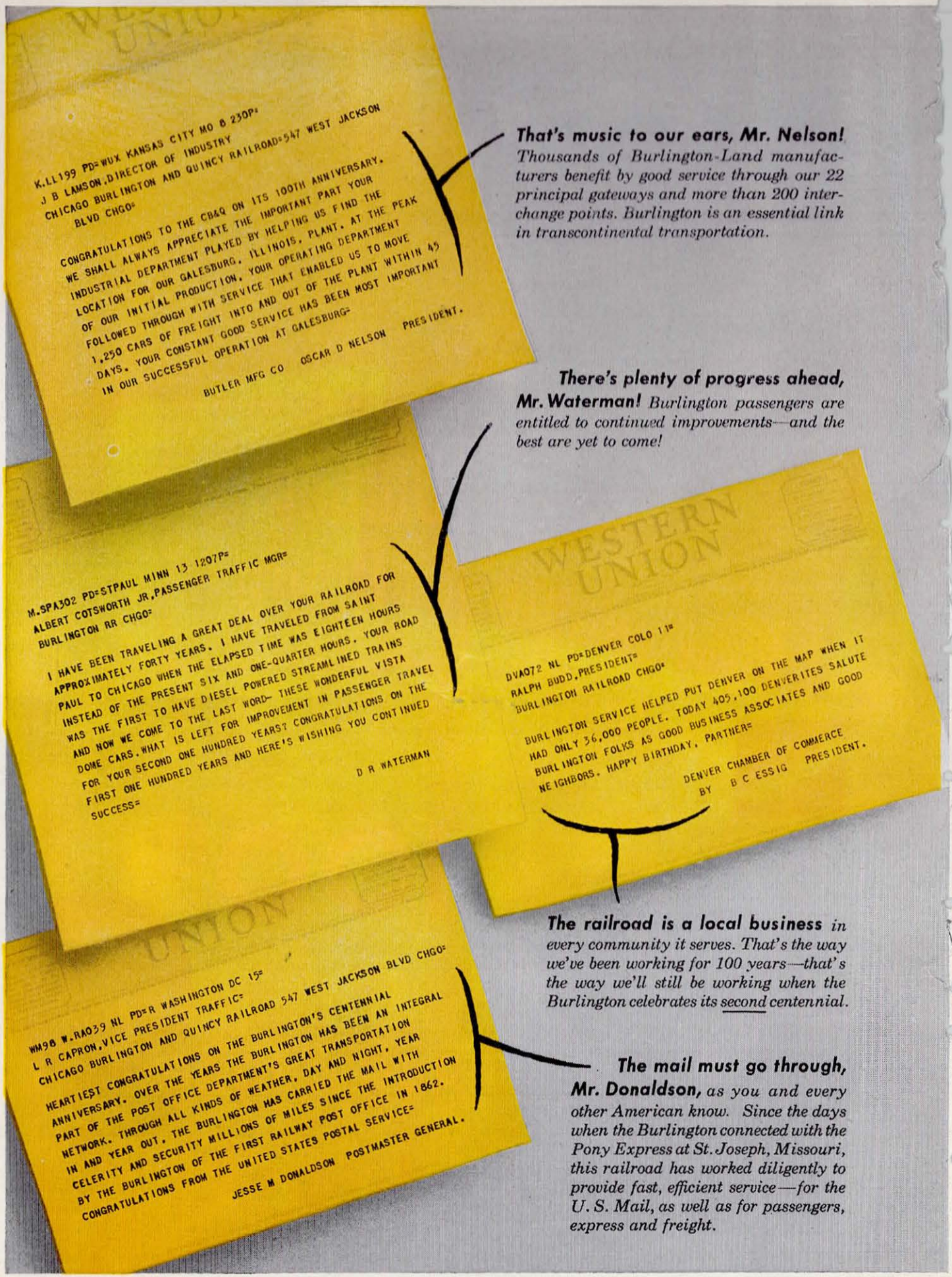
on your

100th

anniversary

1849 - 1949

W. H. MINER, INC. CHICAGO


K.LL199 PD=WUX KANSAS CITY MO 8 230P=
J B LAMSON,DIRECTOR OF INDUSTRY
CHICAGO BURLINGTON AND QUINCY RAILROAD=547 WEST JACKSON BLVD CHGO=
CONGRATULATIONS TO THE CB&Q ON ITS 100TH ANNIVERSARY. WE SHALL ALWAYS APPRECIATE THE IMPORTANT PART YOUR INDUSTRIAL DEPARTMENT PLAYED BY HELPING US FIND THE LOCATION FOR OUR GALESBURG, ILLINOIS, PLANT. AT THE PEAK OF OUR INITIAL PRODUCTION, YOUR OPERATING DEPARTMENT FOLLOWED THROUGH WITH SERVICE THAT ENABLED US TO MOVE 1,250 CARS OF FREIGHT INTO AND OUT OF THE PLANT WITHIN 45 DAYS. YOUR CONSTANT GOOD SERVICE HAS BEEN MOST IMPORTANT IN OUR SUCCESSFUL OPERATION AT GALESBURG=
BUTLER MFG CO OSCAR D NELSON PRESIDENT.
M.SPA302 PD=STPAUL MINN 13 1207P=
ALBERT COTSWORTH JR,PASSENGER TRAFFIC MGR=
BURLINGTON RR CHGO=
I HAVE BEEN TRAVELING A GREAT DEAL OVER YOUR RAILROAD FOR APPROXIMATELY FORTY YEARS. I HAVE TRAVELED FROM SAINT PAUL TO CHICAGO WHEN THE ELAPSED TIME WAS EIGHTEEN HOURS INSTEAD OF THE PRESENT SIX AND ONE-QUARTER HOURS. YOUR ROAD WAS THE FIRST TO HAVE DIESEL POWERED STREAMLINED TRAINS AND NOW WE COME TO THE LAST WORD- THESE WONDERFUL VISTA DOME CARS. WHAT IS LEFT FOR IMPROVEMENT IN PASSENGER TRAVEL FOR YOUR SECOND ONE HUNDRED YEARS? CONGRATULATIONS ON THE FIRST ONE HUNDRED YEARS AND HERE'S WISHING YOU CONTINUED SUCCESS=
D R WATERMAN
WESTERN UNION
DVA072 NL PD=DENVER COLO 11=
RALPH BUDD,PRESIDENT=
BURLINGTON RAILROAD CHGO=
BURLINGTON SERVICE HELPED PUT DENVER ON THE MAP WHEN IT HAD ONLY 36,000 PEOPLE. TODAY 405,100 DENVERITES SALUTE BURLINGTON FOLKS AS GOOD BUSINESS ASSOCIATES AND GOOD NEIGHBORS. HAPPY BIRTHDAY, PARTNER=
DENVER CHAMBER OF COMMERCE
BY B C ESSIG PRESIDENT.
WM98 W.RA039 NL PD=R WASHINGTON DC 15=
L R CAPRON,VICE PRESIDENT TRAFFIC=
CHICAGO BURLINGTON AND QUINCY RAILROAD 547 WEST JACKSON BLVD CHGO=
HEARTIEST CONGRATULATIONS ON THE BURLINGTON'S CENTENNIAL ANNIVERSARY. OVER THE YEARS THE BURLINGTON HAS BEEN AN INTEGRAL PART OF THE POST OFFICE DEPARTMENT'S GREAT TRANSPORTATION NETWORK. THROUGH ALL KINDS OF WEATHER, DAY AND NIGHT, YEAR IN AND YEAR OUT, THE BURLINGTON HAS CARRIED THE MAIL WITH CELERITY AND SECURITY MILLIONS OF MILES SINCE THE INTRODUCTION BY THE BURLINGTON OF THE FIRST RAILWAY POST OFFICE IN 1862. CONGRATULATIONS FROM THE UNITED STATES POSTAL SERVICE=
JESSE M DONALDSON POSTMASTER GENERAL.

That's music to our ears, Mr. Nelson! *Thousands of Burlington-Land manufacturers benefit by good service through our 22 principal gateways and more than 200 interchange points. Burlington is an essential link in transcontinental transportation.*

There's plenty of progress ahead, Mr. Waterman! *Burlington passengers are entitled to continued improvements—and the best are yet to come!*

The railroad is a local business *in every community it serves. That's the way we've been working for 100 years—that's the way we'll still be working when the Burlington celebrates its second centennial.*

The mail must go through, Mr. Donaldson, *as you and every other American know. Since the days when the Burlington connected with the Pony Express at St. Joseph, Missouri, this railroad has worked diligently to provide fast, efficient service—for the U. S. Mail, as well as for passengers, express and freight.*

Published weekly by Simmons-Boardman Publishing Corporation, Orange, Conn. Executive Offices, 30 Church Street, New York 7, N. Y. Entered as second class matter at Orange, Conn., under the act of March 3, 1879. Subscription price $6.00 for one year. U. S. and Canada. Single copies. 50 cents each. Vol. 126, No. 6.

Thank you, Mr. Claassen! *The West and the Burlington have grown together—working as a team through good times and bad. Here's hoping the Claassen family will still be working that land on the Burlington's two-hundredth birthday!*

WESTERN UNION

OMG020 CGN DL PD=BEATRICE NEBR 7 1037A=
VAL KUSKA AGRICULTURAL AGENT=
BURLINGTON RR OMAHA NEBR=

CONGRATULATIONS FROM US WHOSE LAND HAS BEEN IN OUR FAMILY SINCE FATHER BOUGHT IT FROM THE BURLINGTON RAILROAD IN 1874. THROUGH ALL THESE YEARS THE NAME BURLINGTON HAS STOOD FOR INTEGRITY, FRIENDSHIP AND SERVICE. WE OF THE SECOND AND THIRD GENERATION, REMEMBERING THE SERVICE RENDERED OUR PIONEER FATHERS BY THE BURLINGTON, ARE STILL PROFITING BY ITS LAND, CROP, AND PASTURE AND LIVESTOCK IMPROVEMENT PROGRAMS SO ABLY CARRIED ON BY YOUR DEPARTMENT=

A J CLAASSEN.

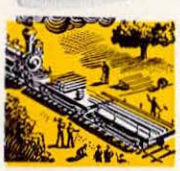
WESTERN UNION

SE101 S.RG18 PD=LA GRANGE ILL 15 1000A=
H C MURPHY,VICE PRESIDENT OPERATION=
CHICAGO BURLINGTON AND QUINCY RAILROAD CHGO=

SELDOM DOES ANY ENTERPRISE REACH ITS CENTENNIAL WITH THE MAGNIFICENT RECORD WHICH HAS CHARACTERIZED ONE HUNDRED YEARS OF ACHIEVEMENT OF THE BURLINGTON RAILROAD. NOT THE LEAST OF THESE WAS YOUR ADOPTION OF DIESEL MAINLINE POWER, FIRST AMONG ALL AMERICAN RAILROADS, AND YOUR COOPERATIVE EFFORTS WITH US IN BRINGING THE DIESEL LOCOMOTIVES OVER THE YEARS TO THEIR PRESENT HIGH STAGE OF DEVELOPMENT. CONGRATULATIONS TO BURLINGTON RAILROAD FOR ITS FARSEEING EFFORTS AND RESULTS IN EVERY FIELD OF RAILROAD DEVELOPMENT=

C R OSBORN VICE PRES
GENERAL MOTORS CORP
GEN MGR ELECTROMOTIVE DIV.

How time flies, Mr. Osborn! *It's been fifteen years since we introduced America's first diesel-powered, streamlined train—the Pioneer Zephyr. Today, a mighty fleet of diesel-powered passenger and freight trains provide better transportation for America. More are on the way!*

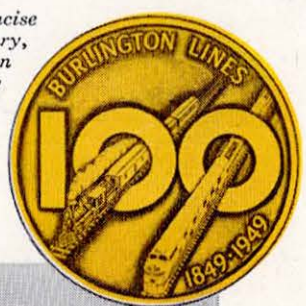


BURLINGTON'S 100th ANNIVERSARY

ONE HUNDRED YEARS AGO, a little group of foresighted men obtained a charter for the twelve-mile Aurora Branch Railroad. From that humble beginning (on February 12, 1849) has grown the present Burlington system—11,000 miles of railroad, serving fourteen great states.

The 35,000 men and women of the Burlington Lines are proud of its past progress and its present achievements. But they are more interested in the future. The Burlington's first century, eventful and productive, lies behind us. Ahead is a new horizon . . . a new challenge . . . a new opportunity—to serve more people better through the years to come.

"MILEPOST 100," *a concise history of the Burlington's first century, is a colorful, illustrated booklet, rich in the lore of the West. For your free copy write Burlington Lines, Room 803, 547 W. Jackson Blvd., Chicago 6, Illinois.*

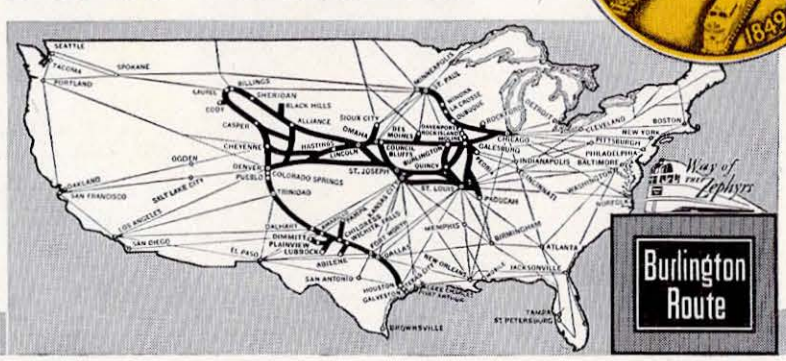


BURLINGTON LINES

Everywhere West

Chicago, Burlington & Quincy Railroad
Colorado and Southern Railway
Fort Worth and Denver City Railway
The Wichita Valley Railway
Burlington-Rock Island Railroad

AN ESSENTIAL LINK IN TRANSCONTINENTAL TRANSPORTATION



BALDWIN

LOCOMOTIVES

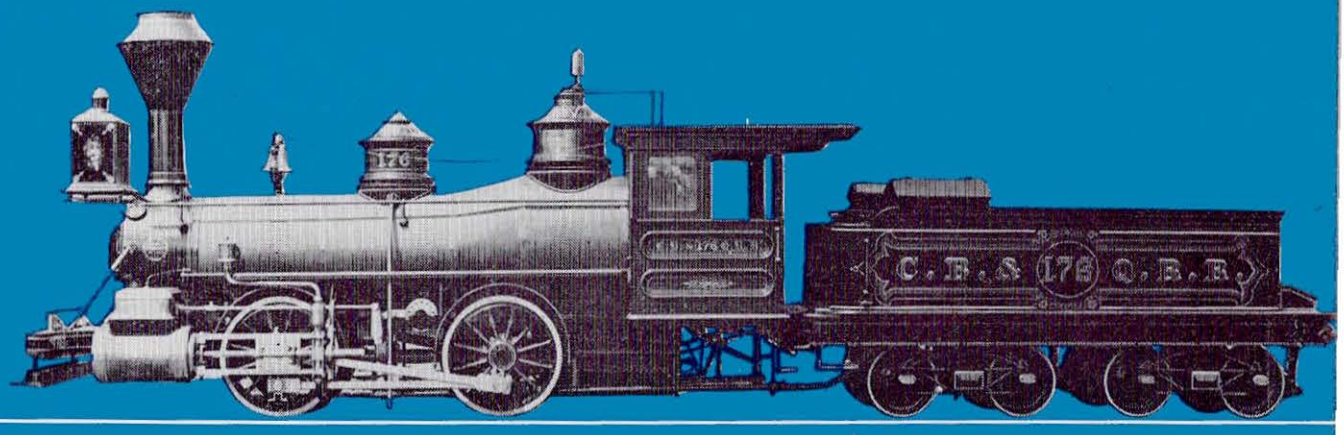
The Baldwin Locomotive Works, Philadelphia 42, Pa., U. S. A. Offices: Boston, Chicago, Cleveland, Houston, New York, Philadelphia, Pittsburgh, San Francisco, Seattle, St. Louis, Washington. In Canada: Canadian Locomotive Co., Ltd., Kingston, Ontario.

Baldwin congratulates the Burlington on its 100th anniversary

One of America's great railroads had its beginning in February 1849, when the Legislature of Illinois granted charters to three railroads which became the nucleus of the Chicago, Burlington & Quincy.

In 1871, The Baldwin Locomotive Works built a little 0-4-0 type locomotive for the Burlington and this was followed, through the years, by hundreds of outstanding Baldwin steam locomotives.

Within recent years, Baldwin diesel-electric locomotives have been added to the Burlington roster.



A Baldwin 0-4-0 type locomotive built for the Chicago, Burlington & Quincy Railroad in the year 1871.

Burlington
Route
Congratulations!
In a century of service, you have contributed immeasurably to the progress and welfare of our nation. May we offer our heartiest congratulations and sincerest wishes for your continued success.
INLAND STEEL COMPANY

INLAND STEEL

INLAND STEEL COMPANY

38 South Dearborn Street, Chicago 3, Illinois

Sales Offices: Chicago, Davenport, Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis, St. Paul

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Chattanooga Choo-Choo*?
No, sir! "Caterpillar" Diesel!

Two "Caterpillar" Diesel D17000 Engines power this G. E. 44-tonner, put into service by the Chattanooga Traction Co., Chattanooga, Tennessee, on January 17, 1944. Since then, averaging 10 hours a day, 6 days a week, it has logged more than 7000 hours' service for less than $100 repair expense. That's mighty little—but it's typical performance from these dependable engines.

Bill Raines, Master Mechanic, says: "We like this 'Caterpillar' Diesel powered locomotive because it's available 100% of the time." Everybody who has anything to do with it along the line, from Superintendent to Shop Helper, feels the same way about it.

Wherever "Caterpillar" Diesels are being used, they are proving themselves outstanding engines. They're built to give reliable, economical, trouble-free service—and they do. More than 90% of the 44-tonners in operation in Class I, II and III railroads throughout the Western Hemisphere are "Caterpillar" Diesel powered.

CATERPILLAR TRACTOR CO. • PEORIA, ILLINOIS

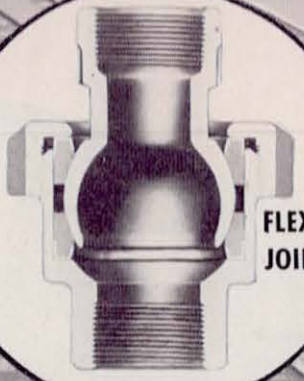
*By permission Leo Feist, Inc.

CATERPILLAR
REG. U. S. PAT. OFF.

DIESEL ENGINES • TRACTORS
MOTOR GRADERS
EARTHMOVING EQUIPMENT

BARCO

GASOLINE HAMMERS



FLEXIBLE JOINTS

GASOLINE DRILLERS

CAR STEAM HEAT CONNECTIONS

SPIKE DRIVERS

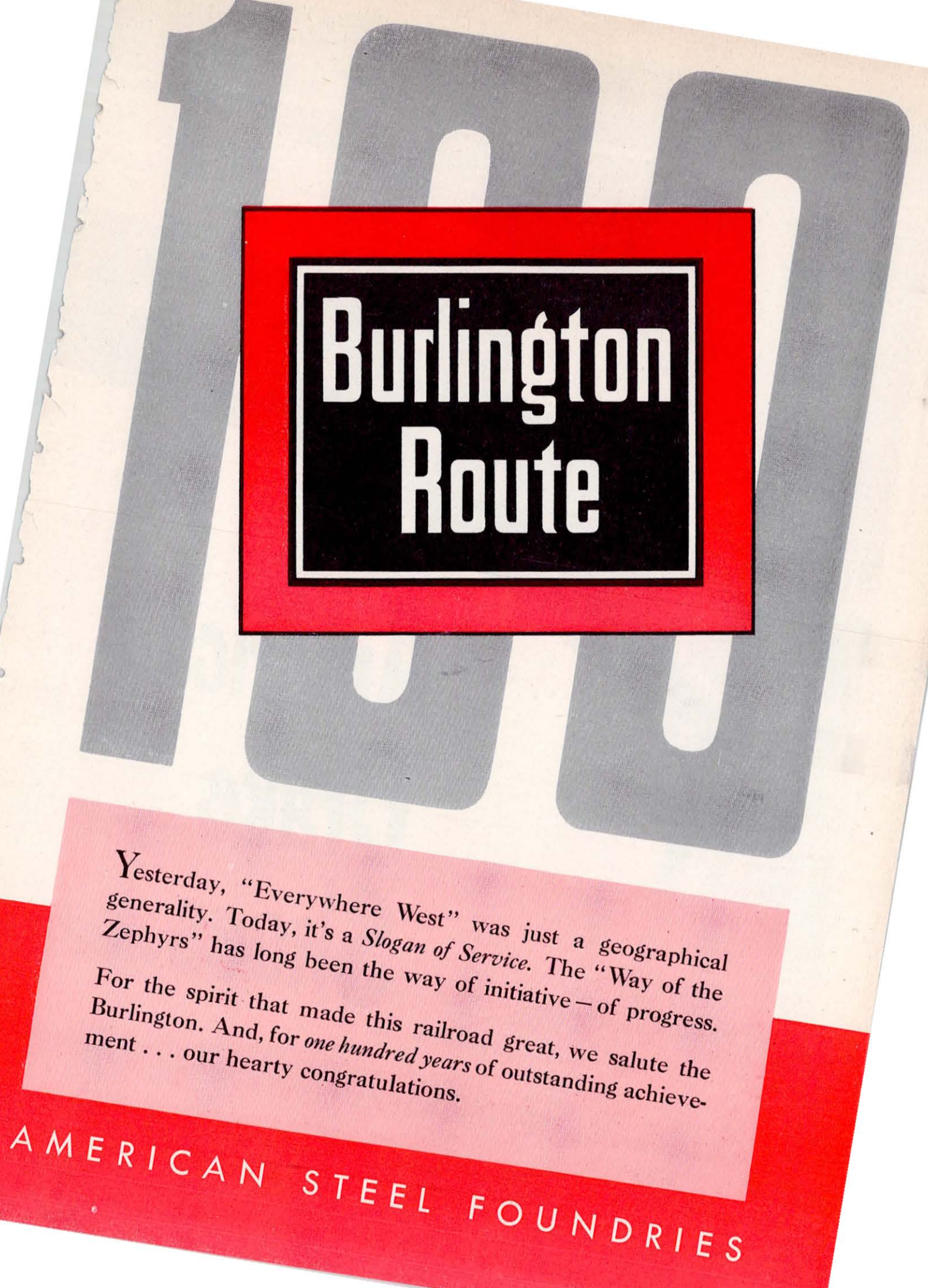
TYTAMPERS

BARCO congratulates the Chicago Burlington and Quincy Railroad on 100 years of service to the people in its territory, and is proud to have served the railroad during a substantial part of this time. Barco Manufacturing Co., 1800 Winnemac Ave., Chicago 40, Ill.

BARCO MANUFACTURING COMPANY

FREE ENTERPRISE—THE CORNERSTONE OF AMERICAN PROSPERITY

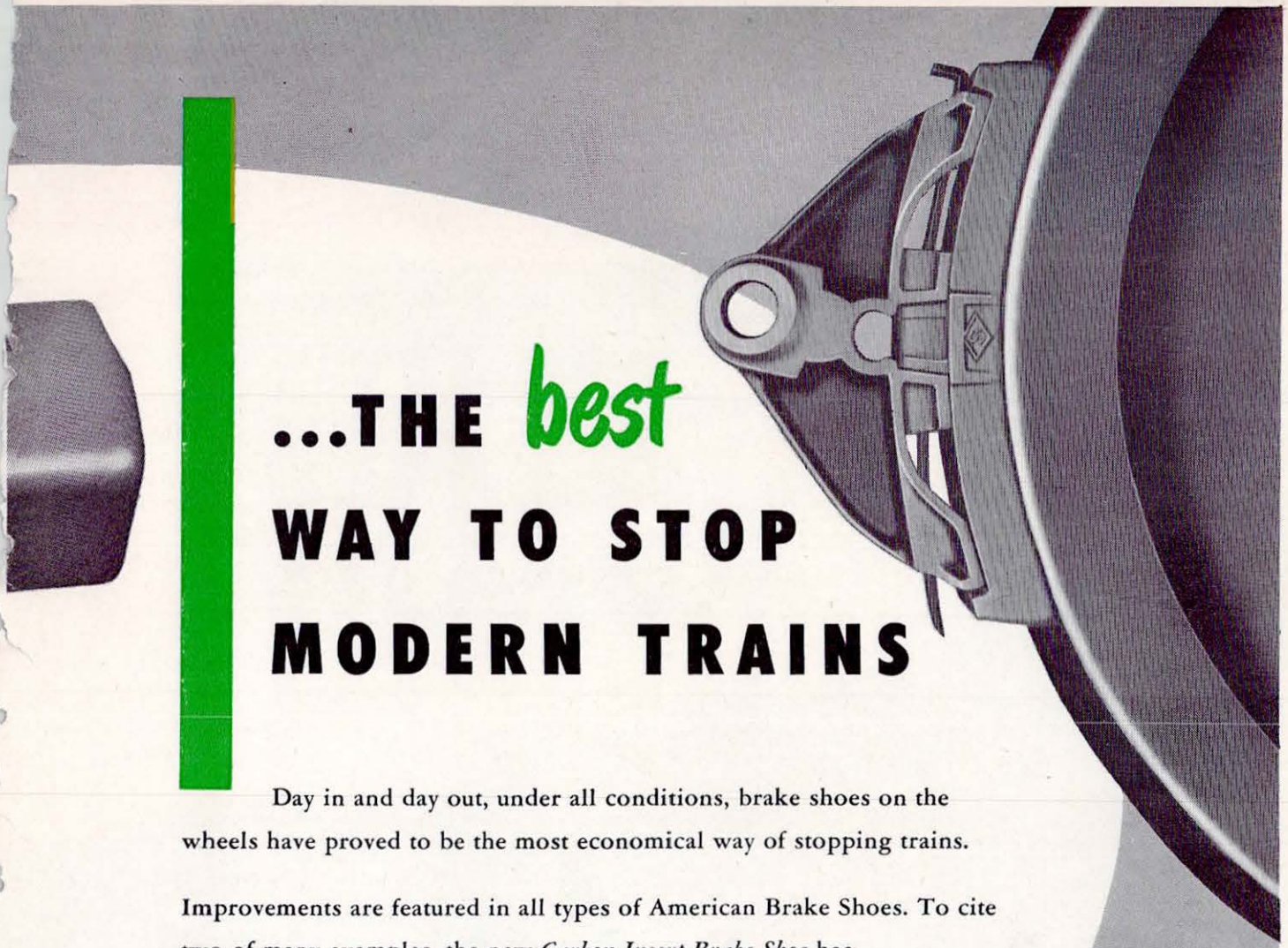
In Canada: The Holden Co., Ltd., Montreal, Canada


100
Burlington
Route
Yesterday, "Everywhere West" was just a geographical generality. Today, it's a *Slogan of Service.* The "Way of the Zephyrs" has long been the way of initiative — of progress.
For the spirit that made this railroad great, we salute the Burlington. And, for *one hundred years* of outstanding achievement . . . our hearty congratulations.
AMERICAN STEEL FOUNDRIES

"Brake Shoe research serves you today and anticipates tomorrow"

Wm. B. Given, Jr., President

American Brake Shoes...



...THE *best* WAY TO STOP MODERN TRAINS

Day in and day out, under all conditions, brake shoes on the wheels have proved to be the most economical way of stopping trains.

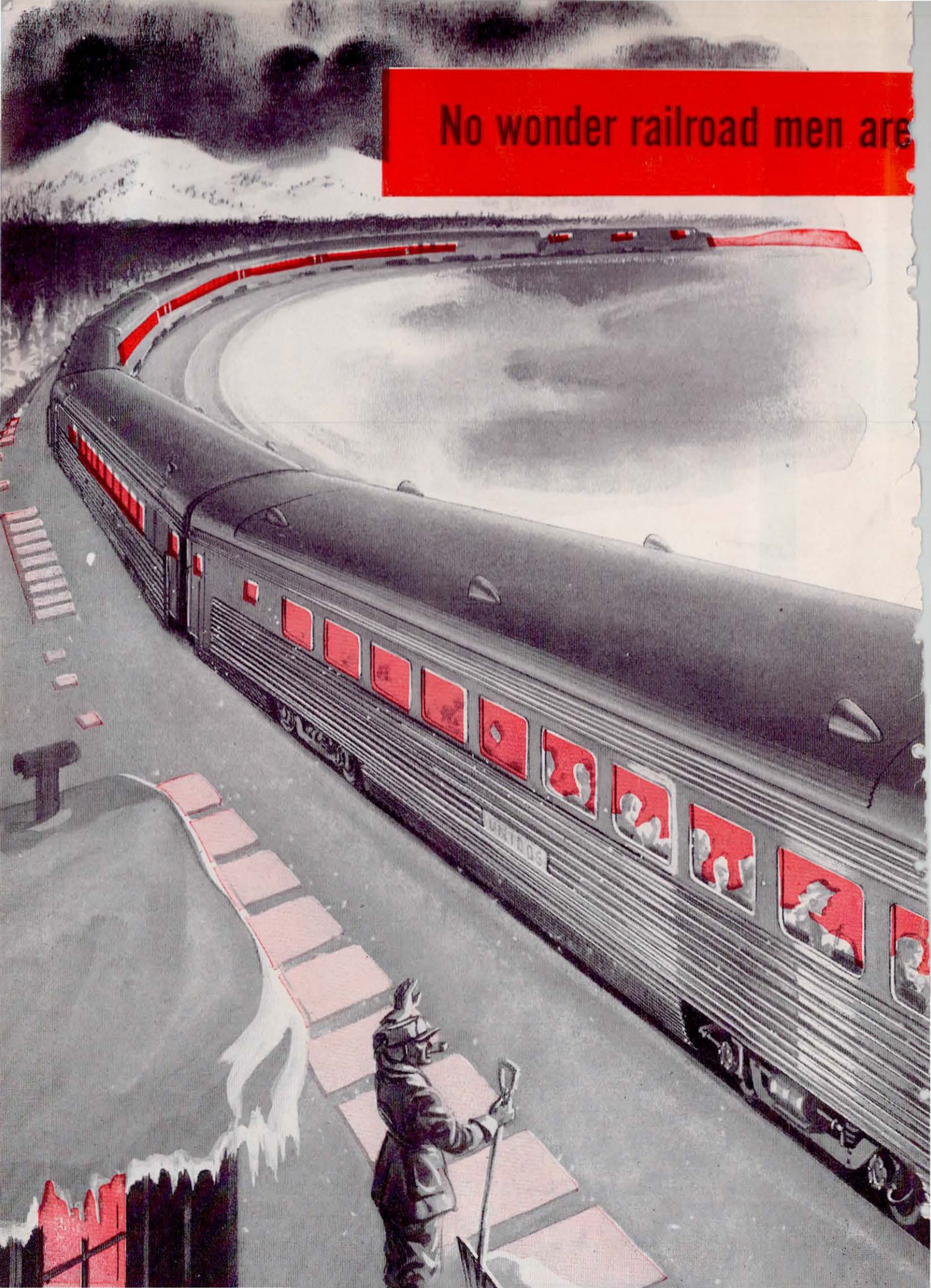
Improvements are featured in all types of American Brake Shoes. To cite two of many examples, the new *Carbon Insert Brake Shoe* has been specially designed for more efficient service on high speed equipment and the *Diamond "S" Brake Shoe* with its recently *Improved Duplane Steel Back* is specially designed for the more exacting freight car service of today.

For detailed information on modern freight and passenger car brake shoes and modern driver shoes, address American Brake Shoe Company, 230 Park Ave., New York 17, N. Y.

AMERICAN Brake Shoe COMPANY

BRAKE SHOE AND CASTINGS DIVISION

7260


No wonder railroad men are

WEATHER VAIN!

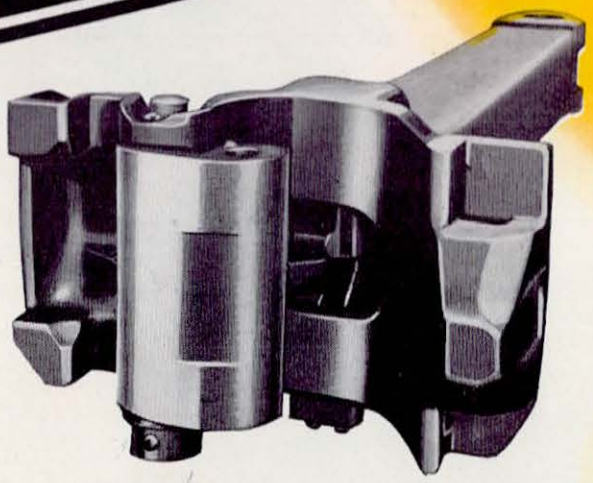
INSUTAPE and WOVENSTONE make it posible for railorad mechanical and operating personnel to *do* something about the weather—inside cars. No matter how long trains may be, Insutape and Wovenstone protect piping from ice and snow, sleet and slush—portect against heat losses as steam courses through pipes the full length of the train. It's always fair weather when Unarco insulation and piping get together! Weather-proof, ballast-proof and fire-proof, Insutape and Wovenstone have provided trouble-free, day-in, day-out service on thousands of cars and locomotives for years. Both can be applied, removed for pipe inspection and reapplied in a jiffy!

UNARCO

UNION ASBESTOS & RUBBER CO.
332 S. Michigan Avenue, Chicago 4, Illinois
New York • San Francisco

SINCE 1849

Burlington Route



M&N&S Co

SINCE 1868

on the BURLINGTON

We're 100% in congratulating the Burlington on the successful conclusion of its first 100 years of railroading, and 100% in wishing it a happy start on its second century of service.

If you've ever ridden on a Burlington streamliner, you know that it's 100% modern, from rail to roof top. Quality under-the-floor engineering, as well as quality interiors, make it so.

The Tightlock Couplers that we've furnished for those streamliners are a vital part of that engineering. Here, again, we're 100% on the Burlington, because every Tightlock Coupler on those streamliners was made by NATIONAL.

NATIONAL MALLEABLE AND STEEL CASTINGS COMPANY

Cleveland, Ohio

NATIONAL Products FOR TRANSPORTATION AND INDUSTRY

M&S Co.

Est. 1868

Railroads all over America stretch maintenance dollars with *PRESSURE GROUTING*

FROM COAST to coast leading railroads are stretching maintenance dollars by stabilizing their track with portland cement grout. Pressure grouting ends troublesome water pockets and soft spots, stabilizes fills, lengthens rail and tie life and increases the load-carrying capacity of the treated sections.

Pressure grouting has proved its worth under all types of traffic and subgrade conditions throughout the country. Many of the more than 50 railroads that have tried this method of roadbed stabilization are employing it as routine maintenance practice—and earning returns up to several hundred per cent of the original investment.

In addition to reducing maintenance cost, portland cement pressure grouting improves operating conditions, permits increased speeds, provides greater safety, allows heavier tonnage limits, insures smoother-riding track and more passenger comfort.

For more information about this proven method of track stabilization write for free, illustrated technical bulletin, "*Stabilizing Railroad Track by Pressure Grouting.*" Distributed only in the United States and Canada.

PORTLAND CEMENT ASSOCIATION

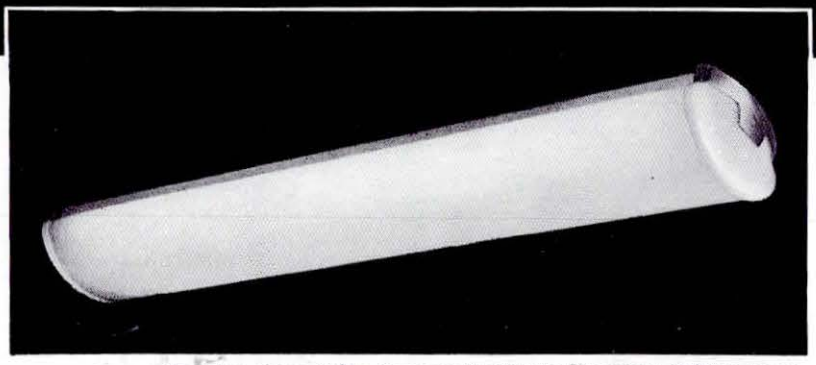
DEPT. A2a-26 • 33 W. GRAND AVENUE • CHICAGO 10, ILLINOIS

A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

Add to Passenger Comfort with Safety Company...

...COACH ILLUMINATION

- SHADOWLESS
- GLARELESS
- ABUNDANT



Top view shows Safety Company Continuous Fluorescent Lighting Trough, with "Safety 68" Plastic Shades. Lower view is standard section, 4 ft. 1/4 in. long, complete with ballast, sockets for lamps and starter socket.

There's a bright new era ahead in comfortable, restful coach illumination . . . available now through Safety Company Fluorescent Lighting. Railroads using this equipment have noted quick and enthusiastic approval from the travelling public. The Safety Company Universal Ceiling Trough illustrated can be used as individual fixtures or can be installed with any number of sectional units to provide one continuous ceiling trough. Other features are ease of installation, quick servicing and economical maintenance. Designed by lighting engineers who have a thorough knowledge of the problems of railroading, Safety Company Fluorescent Lighting Fixtures are made to withstand the rigors of railroad service. For details, call or write to the nearest Safety Company office.

OUR SIXTY-THIRD YEAR LIGHTING AMERICA'S RAILROADS

THE SAFETY CAR HEATING AND LIGHTING COMPANY INC.

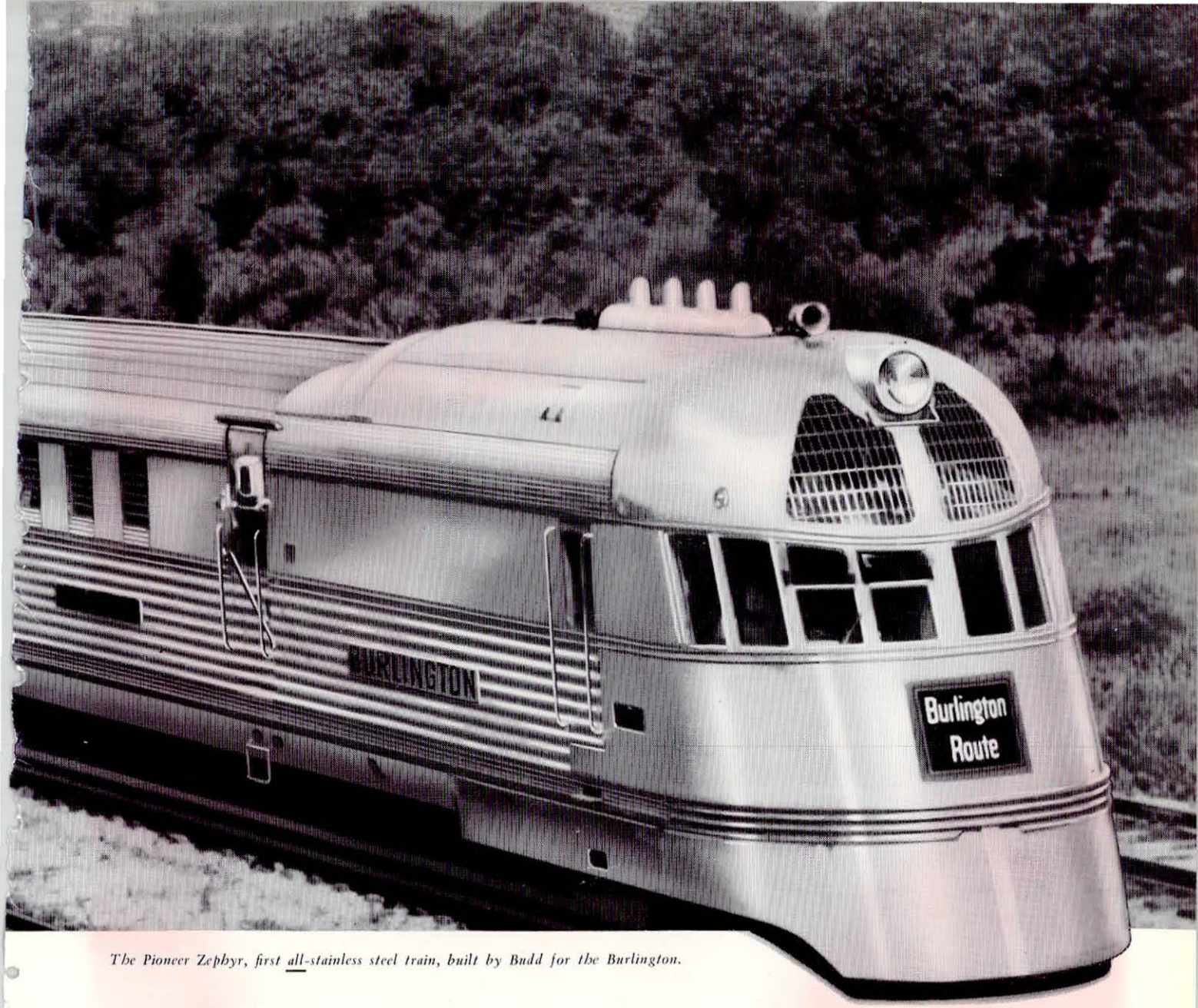
NEW YORK · CHICAGO · PHILADELPHIA · ST. LOUIS · SAN FRANCISCO · NEW HAVEN · MONTREAL

SAFETY COMPANY PRODUCTS INCLUDE: Complete Air-conditioning Equipment • Genemotors • Generators • Fans • Regulators • Lighting Fixtures • Switchboards • Parcel Racks • Generator Drives • Motor Alternators

"The modern era of passenger equipment began with the inauguration of the Burlington's first Zephyr in November, 1934."*

Budd

*Association of American Railroads, "Transportation in America"



The Pioneer Zephyr, first all-stainless steel train, built by Budd for the Burlington.

The Zephyr Fleet

Pioneer Zephyr—Houston-Dallas

Denver Zephyr—Chicago-Omaha-Lincoln-Denver

Twin Zephyrs—featuring Vista-Dome cars. Chicago-St. Paul-Minneapolis

Nebraska Zephyr—Chicago-Omaha-Lincoln

Silver Streak Zephyr—Kansas City-Omaha-Lincoln

Texas Zephyr—Denver-Fort Worth-Dallas

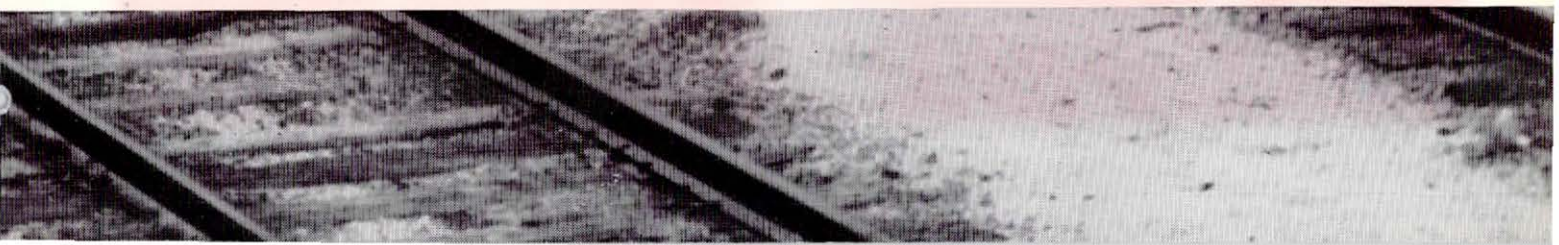
Sam Houston Zephyr—Houston-Dallas-Fort Worth

Mark Twain Zephyr—St. Louis-Hannibal-Burlington

Zephyr Rocket—St. Louis-St. Paul-Minneapolis

Zephyr 9902—Chicago-Burlington-Quincy-Hannibal

California Zephyr—featuring Vista-Dome cars. Daily between Chicago-Denver-Salt Lake City-San Francisco
(starting March 20, 1949)

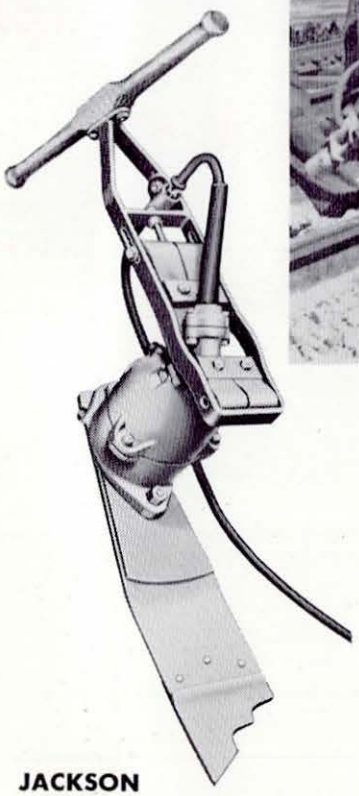


Congratulations

Burlington Route

on your 100 years of Aggressive Progress

Jackson Multiple Tamper
— on the Burlington near LaCrosse, Wisconsin—the machine that is revolutionizing major ballasting operations.



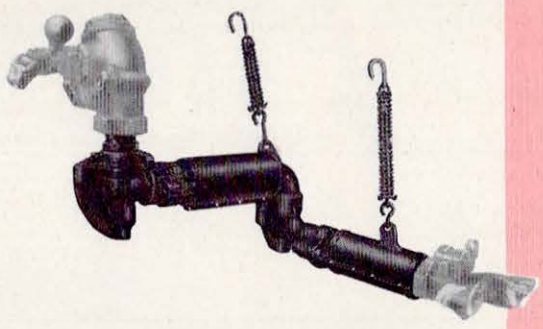
JACKSON TAMPERS & POWER PLANTS
— ideal for section gangs — may be grouped to great advantage for extra gang service.

We are mighty proud of the fact that JACKSON Vibratory Tie Tampers — both multiple and unit types — have played an important part in building and maintaining your excellent roadbed.

ELECTRIC TAMPER & EQUIPMENT CO. Ludington, Michigan

MECHANICAL DEPARTMENTS MUST MAKE CONNECTIONS, TOO!

FOR BETTER WEAR WITH LESS CARE...



Vapor Metallic Conduits take train line pressures up to full boiler pressure of locomotives. They have full opening in any position—minimum resistance to steam flow. Because they are very flexible under pressure they greatly reduce strain on End Train Pipe, Couplers and Train Pipe Threads and Anchors.

VAPOR

METALLIC CONDUITS

ARE THE *RIGHT* CONNECTIONS

- *LAST LIFETIME OF THE CAR*
- *ELIMINATE BURST STEAM HOSE*
- *KEEP FREELY FLEXIBLE UNDER HIGH STEAM PRESSURES*
- *REQUIRE LITTLE MAINTENANCE*
- *REDUCE STEAM FLOW RESISTANCE*
- *PERMIT HEATING LONGER TRAINS*

THE RIGHT CONNECTIONS
FOR SAFETY AND ECONOMY

VAPOR HEATING CORPORATION

80 EAST JACKSON BLVD.
CHICAGO 4, ILLINOIS

New York, St. Paul, Cleveland, St. Louis, Denver, Washington, Philadelphia, San Francisco, Jacksonville, Fla., Houston, Tex., Winnipeg, Montreal

VAPOR **METALLIC CONDUITS**

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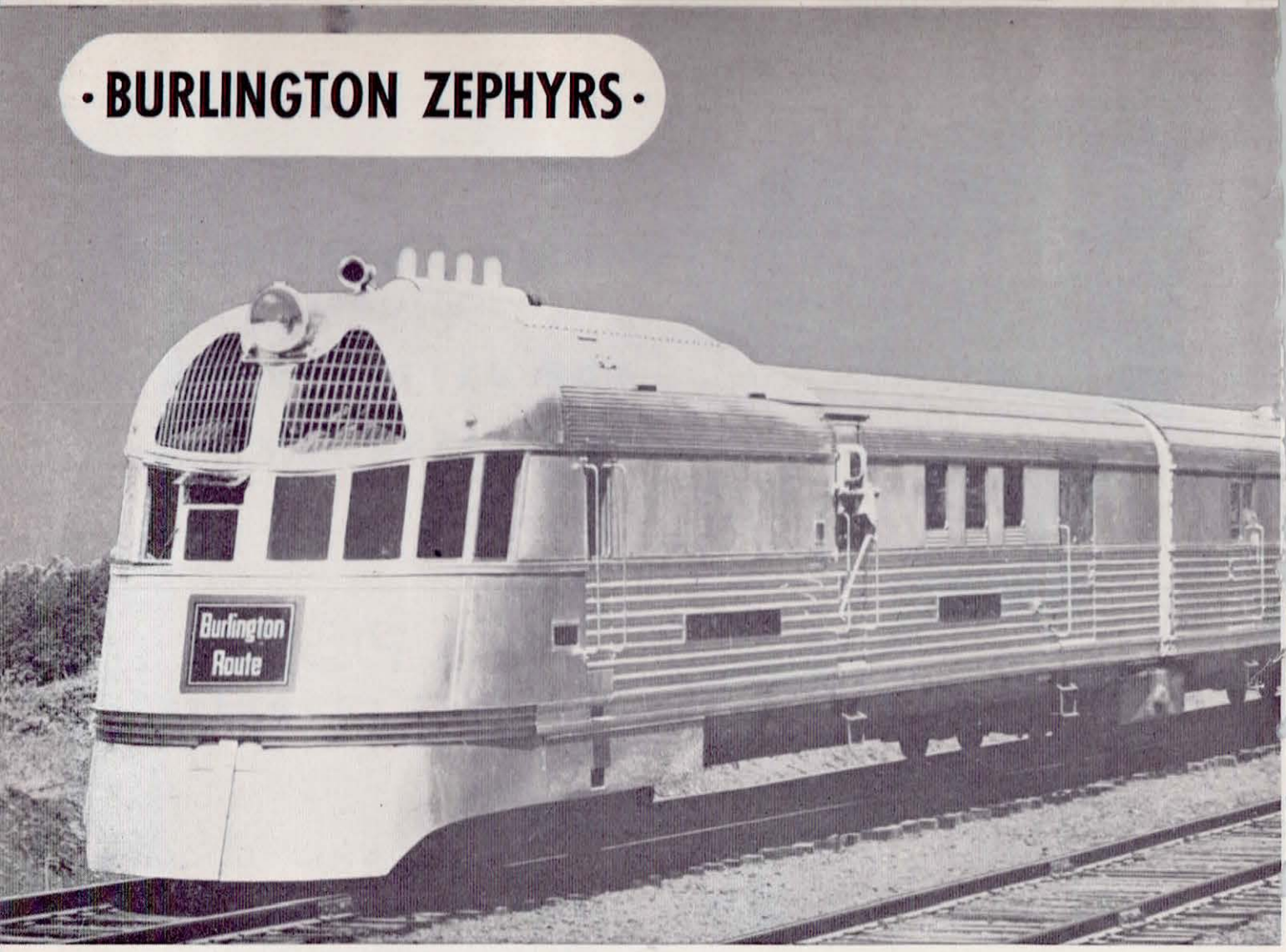
Engineers and Manufacturers of INTENSI-FIRED STEAM GENERATORS • RADOR-'LECTRONIC TEMPERATURE CONTROLS

· BURLINGTON ZEPHYRS ·



From the first Pioneering Zephyr... to the latest Diesel Freight ...

The pioneer Zephyr — America's first Diesel-powered streamliner — is still in daily operation. Since 1934 this unit has covered approximately two and one-quarter million miles.

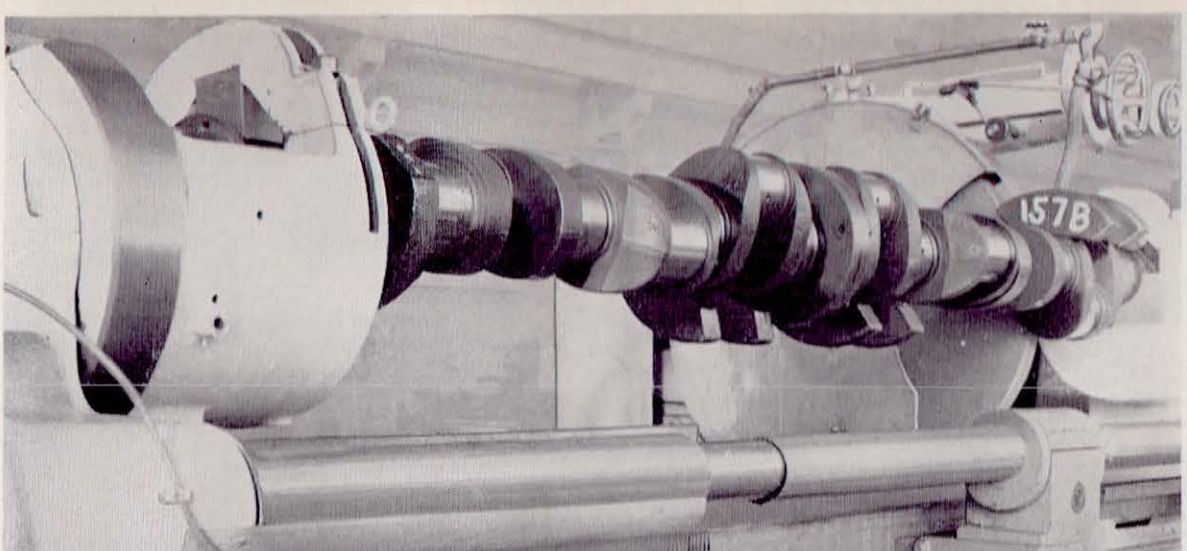
STANDARD OIL COMPANY (INDIANA)

..Burlington lines use Standard's Diesel Lubricants

Today more than 200 Diesel locomotives speed passengers and freight "Everywhere West" over the wide-spread network of the Burlington. These engines have made remarkable availability records. Since the first Zephyr—the pioneer of Diesel passenger trains—took the road in November, 1934, Standard's Diesel Lubricants have contributed to the low maintenance and high availability shown by Burlington Diesel operation.

As a result of their record for cost-saving, clean operation, Standard's Diesel Lubricants are used from border to border and coast to coast. Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

STANDARD OIL COMPANY (INDIANA) STANDARD



TWO MACHINES IN ONE — Grinds Crank-pins, Line Bearings and Axles

Landis Tool precision crankshaft grinders provide an effective tool for controlling maintenance cost and diesel locomotive performance. Other modern Landis Tool grinders can save money in maintenance and the production of replacement parts in the railroad shop. You get heavy metal removal, steady production, precision and fine finish. Write for detailed specifications.

LANDIS TOOL

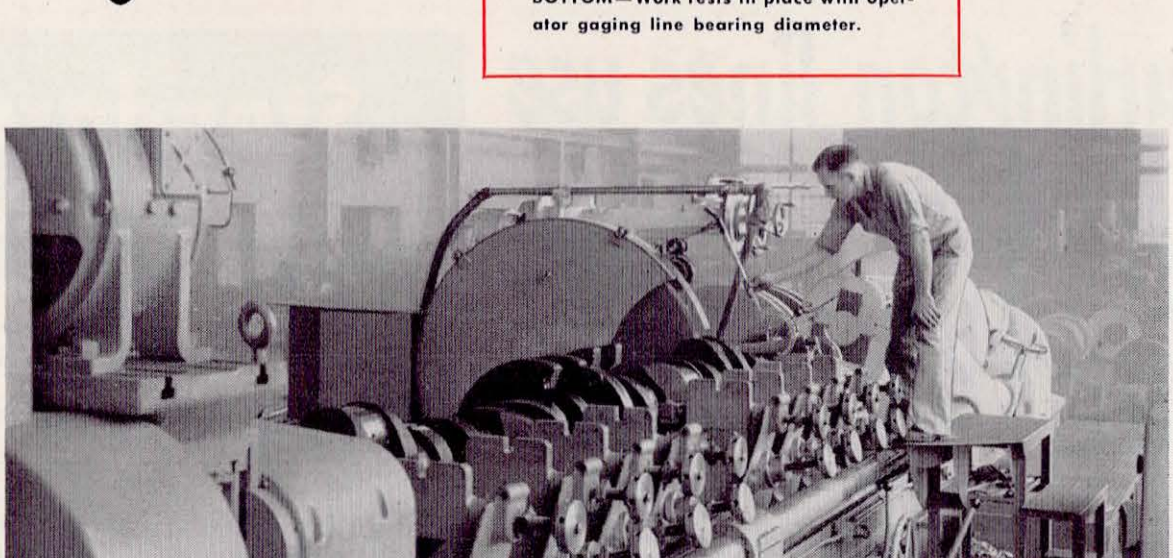
Precision Grinders

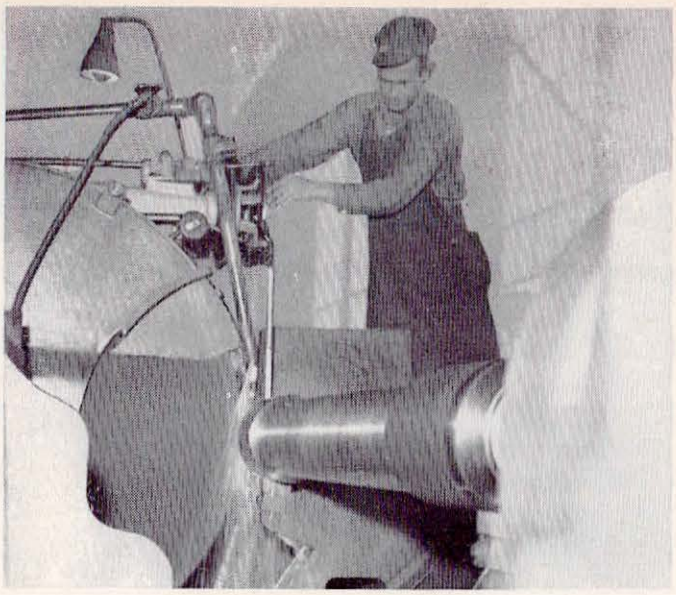
An installation of 40" x 200" Type B Landis Tool Crankshaft and Axle Grinder at C. B. & Q. West Burlington Shops.

TOP—Diesel crankshaft held in work carrying fixtures for pin grinding.

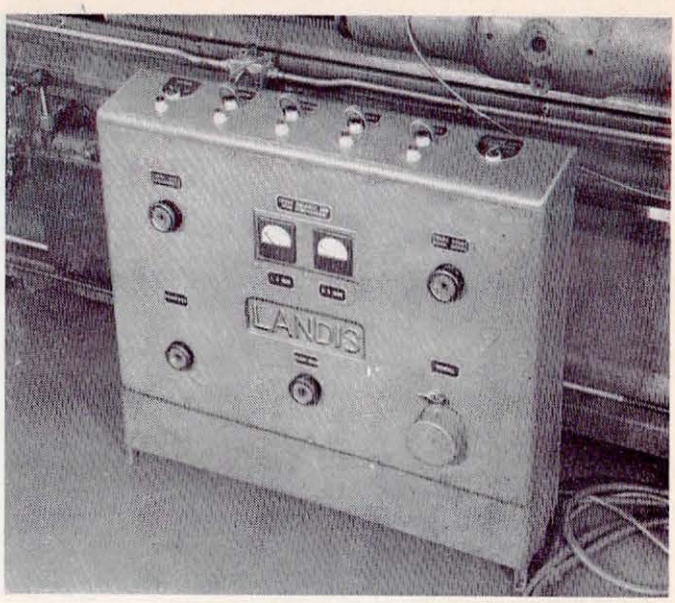
BOTTOM—Work rests in place with operator gaging line bearing diameter.

EQUIPPED WITH MICROSPHERE BEARINGS





AXLE GRINDING ON SAME MACHINE—Crankpin Grinders may be supplied with regular headstock and footstock for plain cylindrical grinding when crank carrying fixtures are removed.



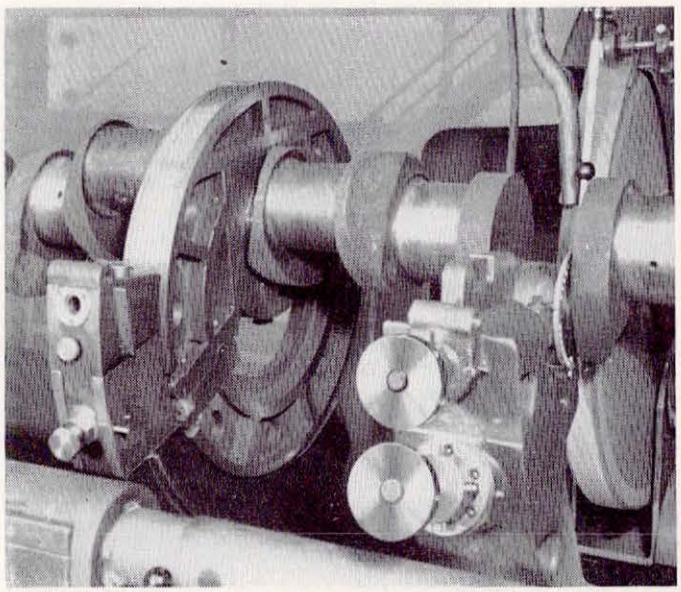
DUAL WORK DRIVE—with centralized electrical control. Work speed of drive motors may be synchronized. Meters permit check of crankshaft balance before grinding.

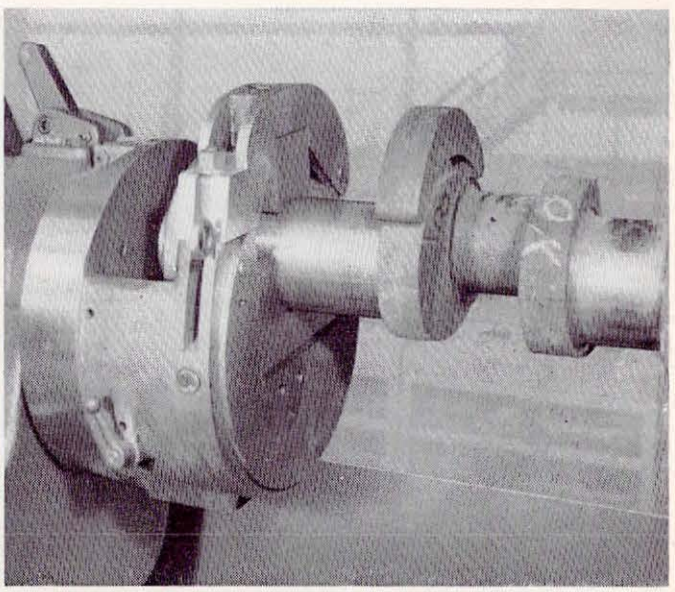
Repair Costs Cut
New Engine Performance Maintained
Grinding Largest Diesel Crankshafts

at Chicago, Burlington & Quincy West Burlington Shops

WORK REST—Eccentric ring type clamps over crankshaft and rotates with work when grinding crank pins. Supported by water cooled bearing.

HOLDS MANY SHAFT SIZES—Crank carrying fixture has interchangeable throw blocks to take care of various end main bearing diameters. Grinds cranks with throws up to 8½" and crankshaft lengths to 18'.





LANDIS TOOL COMPANY, WAYNESBORO, PENNA.

FABREEKA IS USED ON LOCOMOTIVES AND PASSENGER CARS TO ABSORB IMPACT SHOCK, VIBRATION, AND NOISE

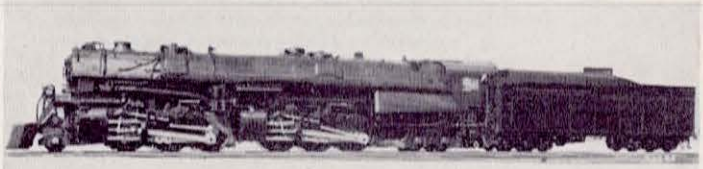
Fabreeka is used on passenger cars to increase passenger comfort by absorbing noise and vibration and to reduce mechanical wear and maintenance. It is applied in trucks, platforms and draft gear.

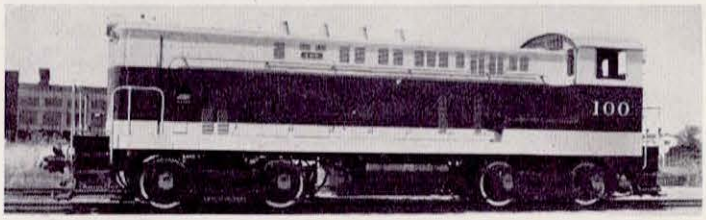
Where abrasive wear is encountered Fabreeka is vulcanized to steel wear plates to insure adequate service life. It is used not only on new equipment but also when cars are modernized.

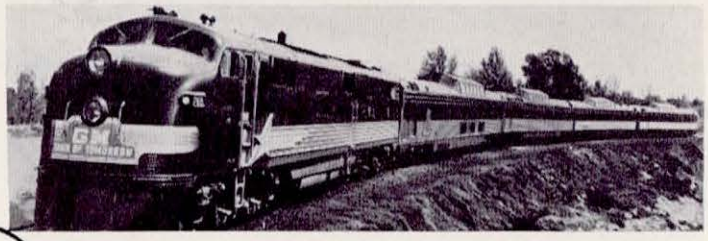
The physical properties which make Fabreeka unique are: *great strength, use in "compression", minimum permanent set, controlled resiliency, stability, high damping value,* and *long life.*

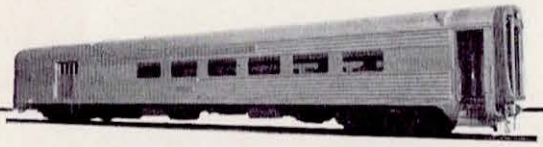
Fabreeka On Locomotives

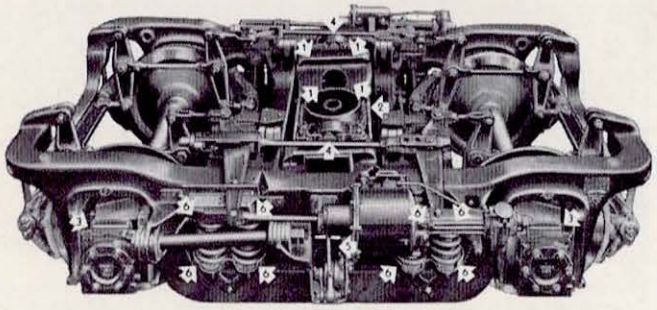
On diesel-electric locomotives and switchers **Fabreeka is used at many points to reduce breakage and maintenance by cushioning impact blows and absorbing high frequency vibration . . . It is applied in main diesel engine mountings, air duct seal between bolster and transom, axle and stop pads, buffer stem sleeves and journal boxes.**
On steam locomotives and tenders, **Fabreeka is used at the spring end clips of semi-elliptic springs, at coil springs, for pull rod wear blocks, journal boxes and at waist bearer on articulated locomotives.**











Six Principal Fabreeka Applications For Passenger Car Trucks

(1) Pad for bolster springs, top and bottom. (2) Pad under center plate. (3) Pad on top of journal box. (4) Pad under truck side bearing. (5) Pad under spring plank. (6) Pad for equalizing coil spring, top and bottom.

(Fabreeka Applications for Car Platform and Car Body)

Center Buffer Stem Sleeve	Side Stem Spring Pad
Side Buffer Stem Sleeve	Coupler Carrier Spring Pad
Side Buffer Stem Sleeve—Rear	Coupler Carrier Pad
Center Buffer Stem Bushing	Coupler Carrier Casting Pad
Side Buffer Stem Lining	Coupler Slide Pad
Side Stem Bushing	Draft Gear Pad
Side Buffer Stem Wear Plate	Pull Rod Unit
Side Buffer Pin Washer	Pull Rod Guide
Side Buffer Stem Pin Bushing	Cylinder Lever Support
Side Stem Bumper	Body Side Bearing Pad

FABREEKA PRODUCTS COMPANY, INC.
222 SUMMER STREET
BOSTON 10, MASSACHUSETTS

SPECIFY FABREEKA

It Pays

Your Guarantee

OF A CANVAS RESISTANT TO FIRE, WATER, WEATHER AND MILDEW

FIRE-CHIEF® Canvas, manufactured by William E. Hooper & Sons Company, always carries the above trade mark on the selvage. Look for it. It is your guarantee of a *permanent, quality* finish.

FIRE-CHIEF® PRODUCTS are manufactured under U. S. Patents No. 2,044,167, No. 2,299,612 and other patents, all owned by William E. Hooper & Sons Co.

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General Sales Offices:

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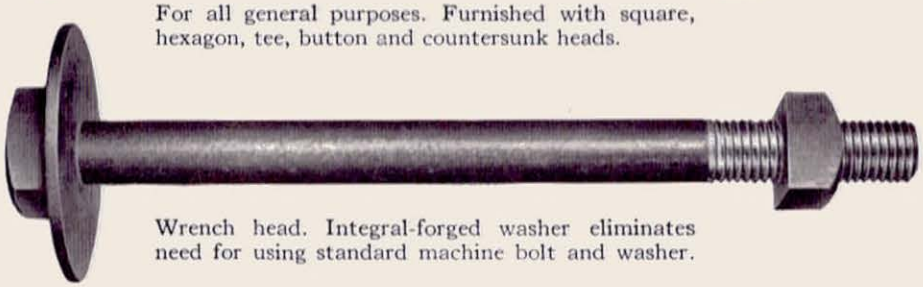
For Bridge and Trestle Construction

The fastenings shown here are products of Bethlehem's Lebanon, Pa., plant, and are made of new-billet steel in a wide variety of carbon or alloy grades. Obtainable with reasonable promptness in any quantity, with cut or rolled threads, square or hexagon nuts, plain or hot-dip galvanized.

MACHINE BOLT

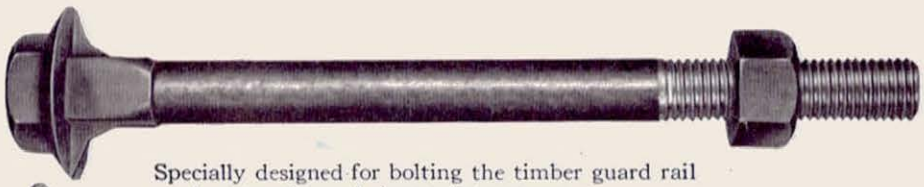
For all general purposes. Furnished with square, hexagon, tee, button and countersunk heads.

BRIDGE BOLT



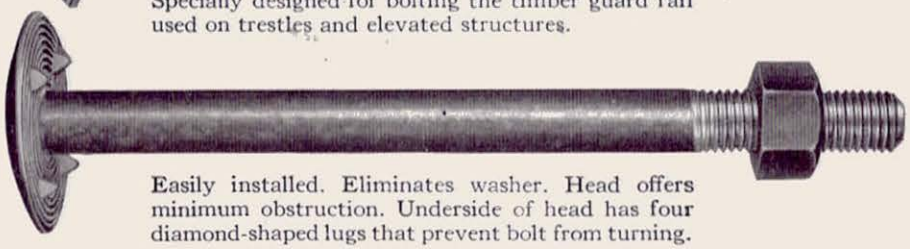
Wrench head. Integral-forged washer eliminates need for using standard machine bolt and washer.

TIMBER GUARD RAIL BOLT



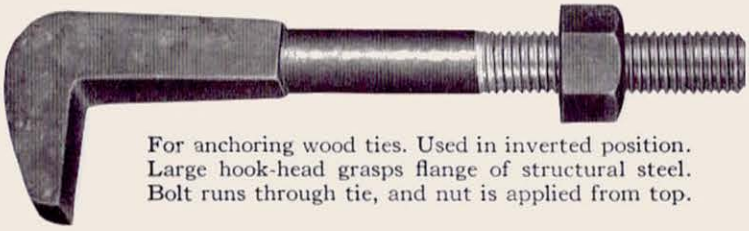
Specially designed for bolting the timber guard rail used on trestles and elevated structures.

TIMBER BOLT



Easily installed. Eliminates washer. Head offers minimum obstruction. Underside of head has four diamond-shaped lugs that prevent bolt from turning.

TIE BOLT



For anchoring wood ties. Used in inverted position. Large hook-head grasps flange of structural steel. Bolt runs through tie, and nut is applied from top.

DRIFT BOLT

For virtually every type of timber construction. Bodies: round or square. Heads: button, countersunk, square and headless. Points: wedge, semi-cone, full-cone, and no-point.

BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

Bethlehem supplies every type of Railroad Fastening

ENDURING is the word for both...

Courtesy of the Burlington Railroad.

DEPENDABLE SCULLIN STEEL CASTINGS SALUTE THE DEPENDABLE BURLINGTON THEY'VE SERVED SO LONG

50 YEARS' PROGRESS

For 45 of the Burlington's 100 years, Scullin has supplied this great railroad with constantly-improving locomotive and freight car castings.

As we mark our own half-century of progress, we're particularly proud that the *unfailing dependability* of Scullin Steel Castings has contributed to the Burlington's reputation for reliable service—as it has to so many other leading lines.

When you specify Scullin—you're *sure!*

SCULLIN STEEL CO.

SAINT LOUIS 10, MISSOURI

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MAXIMUM

PROTECTION

in all respects

Cardwell and Westinghouse shock-absorbing devices protect rolling stock against excessive horizontal, vertical, lateral and angular forces. They are designed with a high factor of safety, resulting in capacities well above the requirements.

Over 98% of the cars in freight carrying service are A.A.R. construction and over 96% have Friction Draft Gears.

2688

Cardwell Westinghouse Co., Chicago
Canadian Cardwell Co., Ltd., Montreal

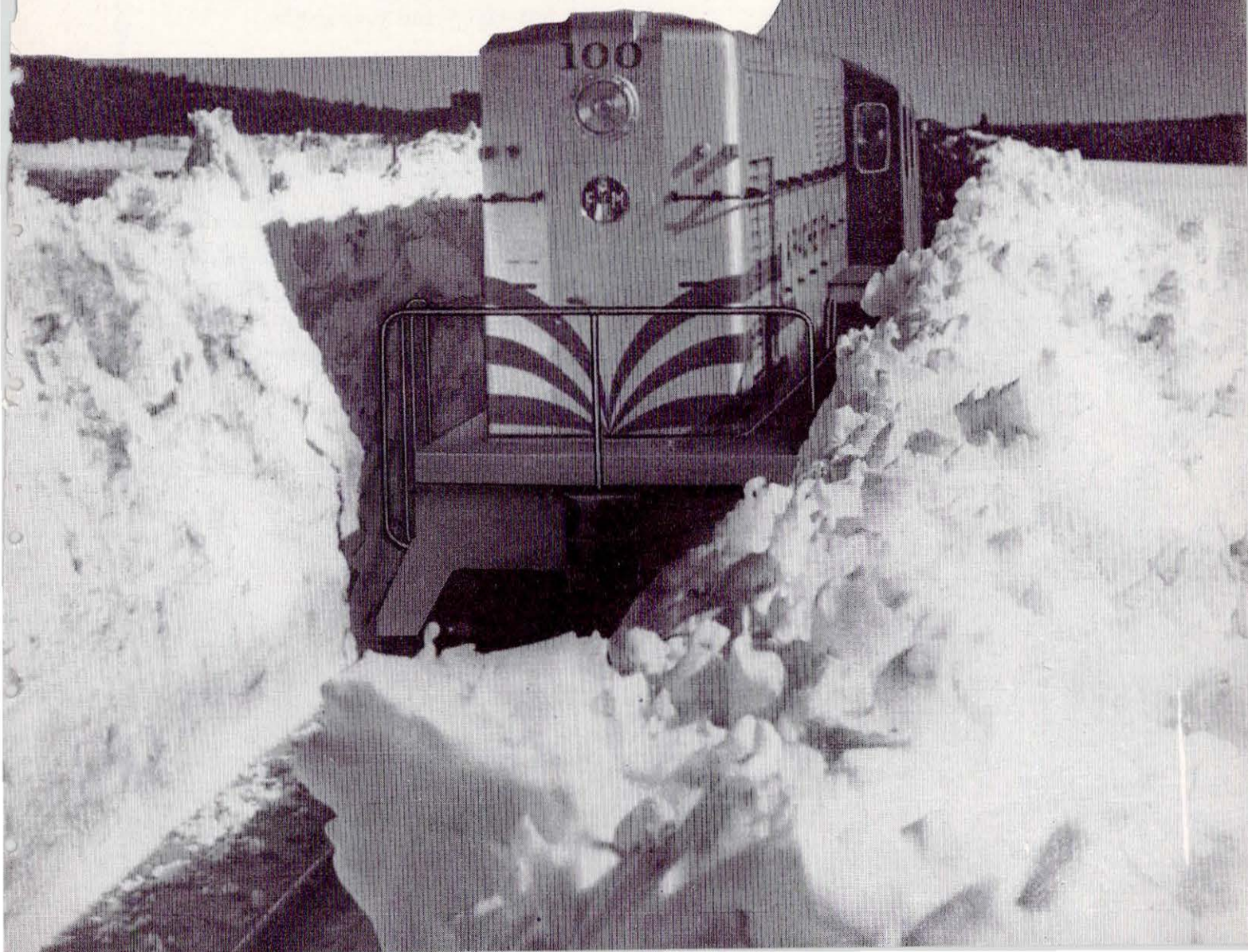
Elevation: 9000 Feet
Satisfaction: 100%

Besides cutting cost of operation by better than 60% over the steam equipment it replaced, this 1000 h.p. Fairbanks-Morse road locomotive has set new records for availability for The Apache Railway Co. Elevations of 9000 feet have caused no noticeable loss of power. Typical performance: on 18 miles of 2½% ruling grade, loads are as high as 500 tons. Generous design of electrical equipment and the performance of the great Opposed-Piston Engine recommended Fairbanks-Morse diesel power to this railroad, as they must to you. Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE

A name worth remembering

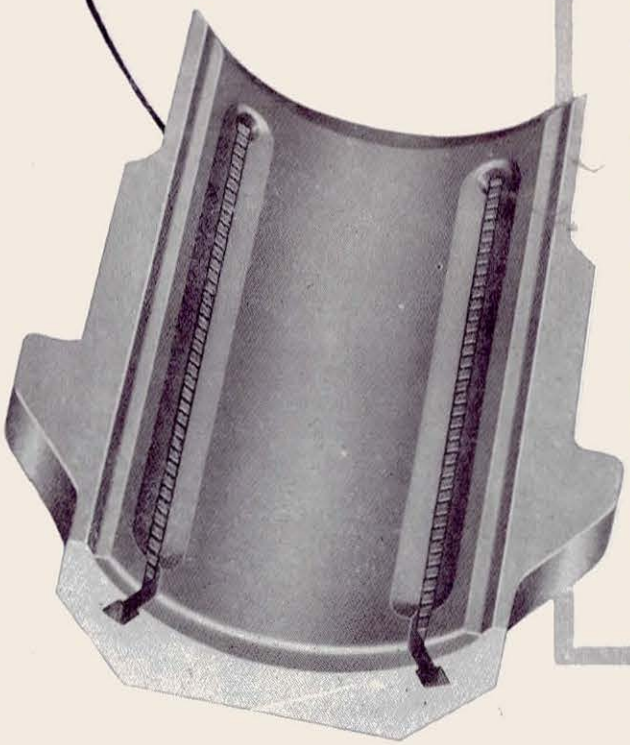
DIESEL LOCOMOTIVES • DIESEL ENGINES • PUMPS • SCALES
MOTORS • GENERATORS • STOKERS • RAILROAD MOTOR
CARS and STANDPIPES • FARM EQUIPMENT • MAGNETOS



Modern MAGNUS BEARINGS *Improved*

"MAGSAFE" Satco-Lined JOURNAL BEARING

Stops Lint-Wipers and Waste-Grabs



The "Magsafe" Satco-Lined Car Journal Bearing complies with standard A.A.R. design and dimensions, but is equipped with "T" section brass "combs" to prevent lint-wipers and waste-grabs.

These combs are loosely held so that they rest on the journal and follow closely its every up-and-down movement.

Further advantages of the comb arrangement are uniform lubrication along the journal, and oil retention in the bearing, which is available the instant the car starts to move.

SATCO Bearing Metal

MODERN HEAVY DUTY BEARINGS

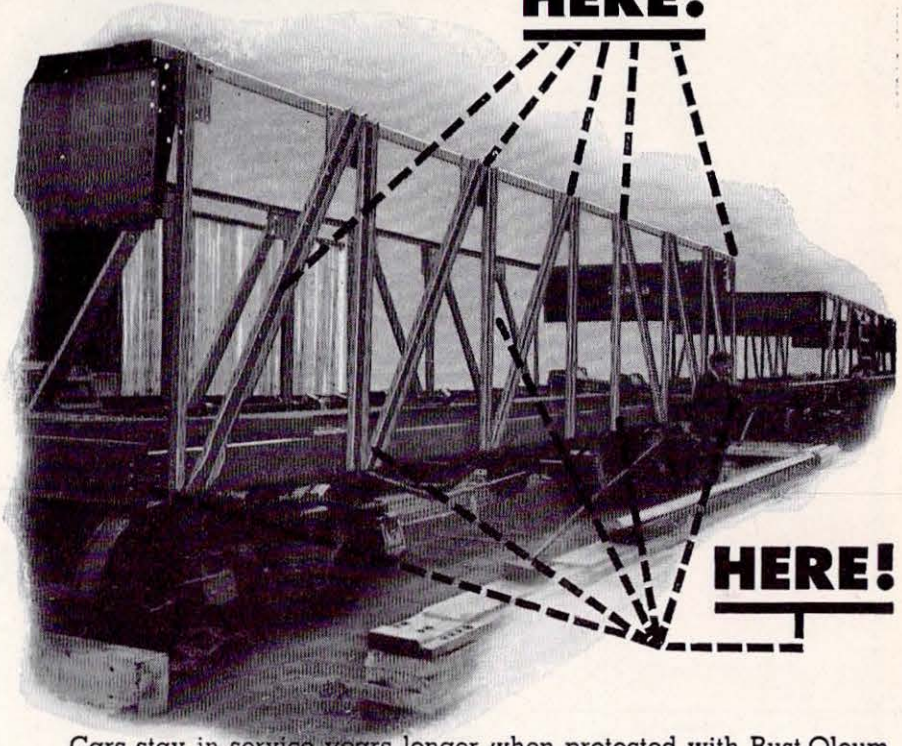
MAGNUS METAL CORPORATION
CHICAGO NEW YORK

2181

CUT LABOR COST...LENGTHEN CAR LIFE... WITH RUST-OLEUM

IT STOPS RUST HERE!

Easier to Use . . .
Cuts Maintenance
Protects Longer



Here's Why!

- Rust-Oleum is waterproof, air-tight, pliable and elastic—the scientific rust preventive.
- It won't blister, crack or peel and defies corrosive elements.
- Rust-Oleum protects metal and resists acids, fumes, dampness and heat—alone, or in combination.
- Applied by brush, dip or spray, it may be used with equal efficiency and money-saving results on new metal.
- Rust-Oleum goes on faster . . . and lasts longer.

Cars stay in service years longer when protected with Rust-Oleum . . . It outlasts ordinary materials two to ten times. Positive protection is assured — particularly in hidden areas, where condensation *due to temperature changes* breeds rust . . . and around rivet heads, at laps and joints, where "gas pockets" form when materials are burned out during construction.

Rust-Oleum can be applied directly to any rusted surface — after wire-brushing to remove loose rust scale, blisters, dirt, etc. You avoid time-wasting, expensive sandblasting. Rust-Oleum by penetration merges the remaining rust into a tough, pliable, protective coating.

Specify Rust-Oleum on new cars and rebuilding programs. Get the facts! Write today for Catalog No. 145 of recommended applications.

RUST-OLEUM CORPORATION

2415 Oakton Street • Evanston, Illinois

"Ay, mon, here's another economy suggestion—ask aboot Rust-Oleum's R-9 Journal Protective Coating for the temporary protection of machined surfaces. It's a money-saver—easier, cleaner and safer to use. ORDER A DRUM FOR TRIAL and compare the results and its convenience of use with the material you are now using for protecting metal."
RUST-OLEUM

MAIL THIS COUPON — TODAY!

Rust-Oleum Corporation, 2415 Oakton St., Evanston, Ill.

Gentlemen: Please send a free copy of your Rust-Oleum catalog of railroad applications and recommended uses.

Name_____

Company_____

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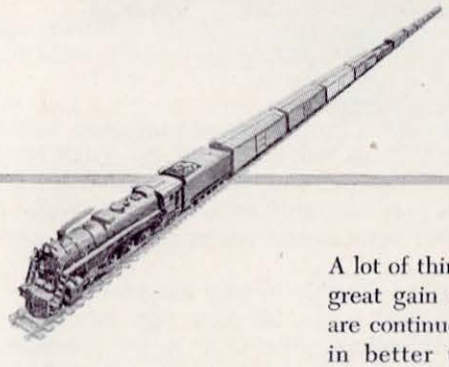
City_____ State_____

( ) Also send information on R-9

Just a minute... while we move a mountain!



Yes—we mean just that! The freight-hauling job the railroads are doing these days is equivalent to moving more than a million tons of freight a mile every minute of the day and night.

Moving this mountainous load every minute calls for the most efficient possible use of cars and locomotives—and the railroads are using them today so efficiently that the average train turns out transportation service equivalent to moving 18,212 tons of freight a mile every hour. That's nearly two and one-half times as much as the average train did just after the first World War.

A lot of things helped bring about this great gain in efficiency. Among them are continued and expanding research in better transportation tools and methods—and huge investment in providing the better facilities necessary to do an ever better job. This investment has averaged, over the past quarter of a century, more than $500,000,000 a year. And in 1948 it was well above one billion dollars.

For the future, the railroads plan to keep on investing in new cars and engines, better shops and signals, better tracks and terminals, and all the other things that mean better service to the public.

The only way railroads can get the money to pay for these improvements is through their earnings. To keep abreast of the needs of the nation they must make earnings which are in line with today's expenses and today's costs. That would be your best insurance that the American people and American business will continue to have the most efficient, most economical, most dependable rail transportation in the world.

ASSOCIATION OF AMERICAN RAILROADS

WASHINGTON 6, D. C.

★ **Listen to THE RAILROAD HOUR, presenting the world's great musical shows. Every Monday evening over the ABC Network, 8-8:45 Eastern, Mountain, and Pacific Time; 7-7:45 Central Time.** ★

IN THE HEAT OF THE SUN OR THE COOL OF THE SHADE

Interior views of the Burlington's new Vista Dome Car *Manufactured by* The Budd Company

MULTI-VENT

insures passenger comfort in the new Vista Dome

A difficult air conditioning problem solved by MULTI-VENT

The Vista Dome section of this new car presented an unusually severe test for Pyle-National's Multi-Vent system of air distribution. The great amount of radiant heat from the sun admitted through the expansive glass surfaces had to be overcome as well as the latent heat from the glass itself. In addition this compartment had to maintain an even temperature when the sun's rays were suddenly cut off by clouds or mountain shadow.

The installation of six separately controlled Multi-Vent panels overhead, dividing the dome section into six temperature zones, successfully passed the test and solved this air conditioning problem.

Through the myriad perforations in these Multi-Vent panels, warm or cool air flows in great enough volume per minute to maintain the required temperature in each zone in spite of the radical heat losses and heat gains to which these glass domes are subjected. As large as this necessary volume of air is, and as rapidly as it must be diffused, the velocity of air delivered is so low that no hot or cold currents are set up. The passengers are completely free from drafts and enjoy uniform temperatures throughout the Vista Dome Car.

Pyle-National's Multi-Vent system of air distribution is being used in both upper and lower levels in the dome cars, and in all sections of the sleeping cars of the new Burlington Zephyrs.

Since 1897

THE PYLE-NATIONAL COMPANY

MULTI-VENT DIVISION—1365 West 37th St., Chicago 9, Illinois

Offices: New York—Baltimore—Pittsburgh—St. Louis—St. Paul—San Francisco—Cleveland
Export Department: International Railway Supply Co., New York
Canadian Agent: The Holden Co., Ltd., Montreal

l o n g e r SPRINGS

BARBER STABILIZED TRUCKS

Back in 1939 it was apparent that the constant demand for higher train speeds would create a demand for l-o-n-g-e-r Bolster Springs to cushion and absorb the greater road shocks which would be encountered.

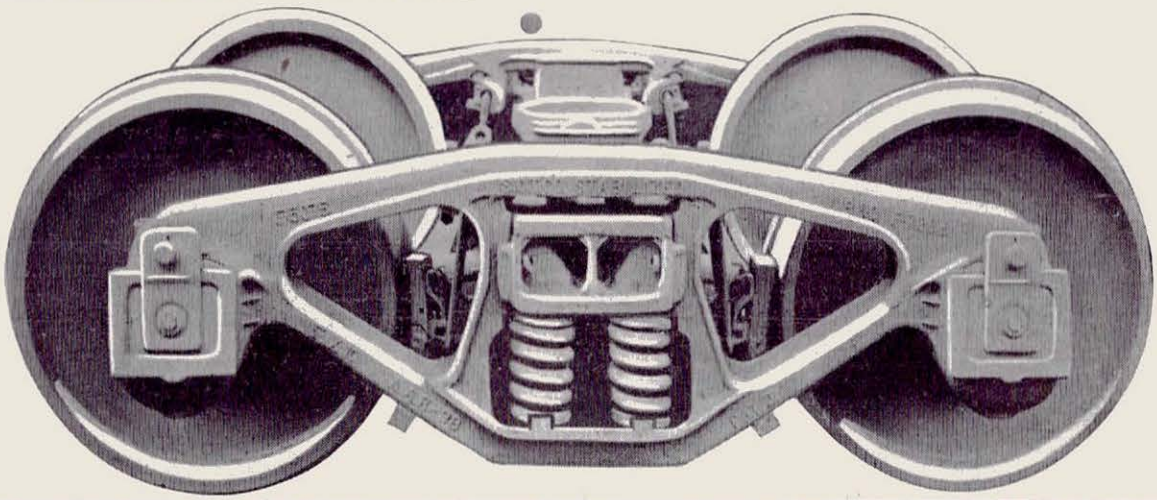
At that time, pioneering studies and tests on l-o-n-g-e-r springs were started by this Company, resulting in the development of Barber Trucks for springs having up to 3 13/16" travel or more, with the necessary stabilizing combination to control their greater movements.

Many thousand Car Sets of these l-o-n-g-e-r Spring Barber Stabilized Trucks are now in service, giving Freight Cars a fully controlled, smoother Vertical and Lateral ride.

1 Special Alloy-Iron friction casting having 35 square inches of friction-bearing surface.

2 Spring-steel wear plate securely bolted or welded to the column.

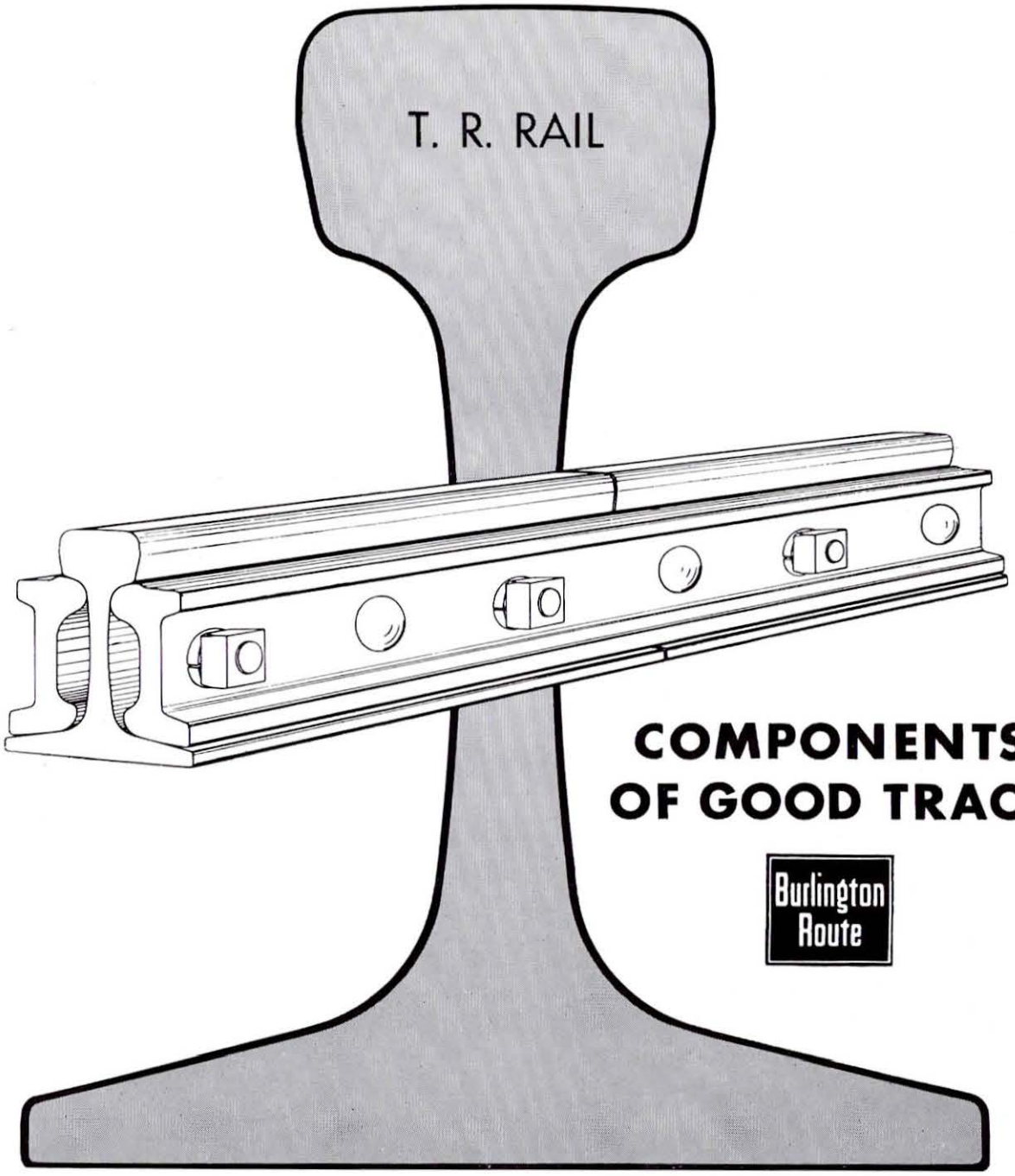
3 Friction-casting-supporting side-spring having a minimum 3/4" initial compression.



3174

STANDARD CAR TRUCK COMPANY
332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

Congratulations to the BURLINGTON on *100 Years of Progress*



COMPONENTS OF GOOD TRACK

Burlington Route

THE RAIL JOINT COMPANY Inc.

50 CHURCH ST. NEW YORK 7, N. Y.

IF IT'S A TOUGH JOB

On the Union Pacific, sleek-nosed Alco-G.E. 6000-hp passenger diesel-electrics snake 1200-ton trains over the winding 2.2 percent Cajon hump at maximum permissible speeds. Similarly, their design twin, the 1500-hp Alco-G.E. freight unit, in multiples of four, makes the same eastbound run with 75-car, 3000-ton drags. Westbound ratings are even higher—2000 tons for the passenger locomotives, 4000 tons for the freighters.

These tonnage ratings, the highest for this run, are assigned exclusively to Alco-G.E. equipment.

How do they do it? Turbosupercharged, 4-cycle power evenly applied to all driving axles by a superfast control system supplies part of the answer. Unusually high short time and continuous ratings of the traction motors supply the rest. Not only have these high-capacity motors proven their superiority in handling heavy loads at high speeds upgrade, but they can ease these same heavy loads down the mountain. Exceptionally high dynamic braking effort downgrade greatly reduces the need for application of air brakes.

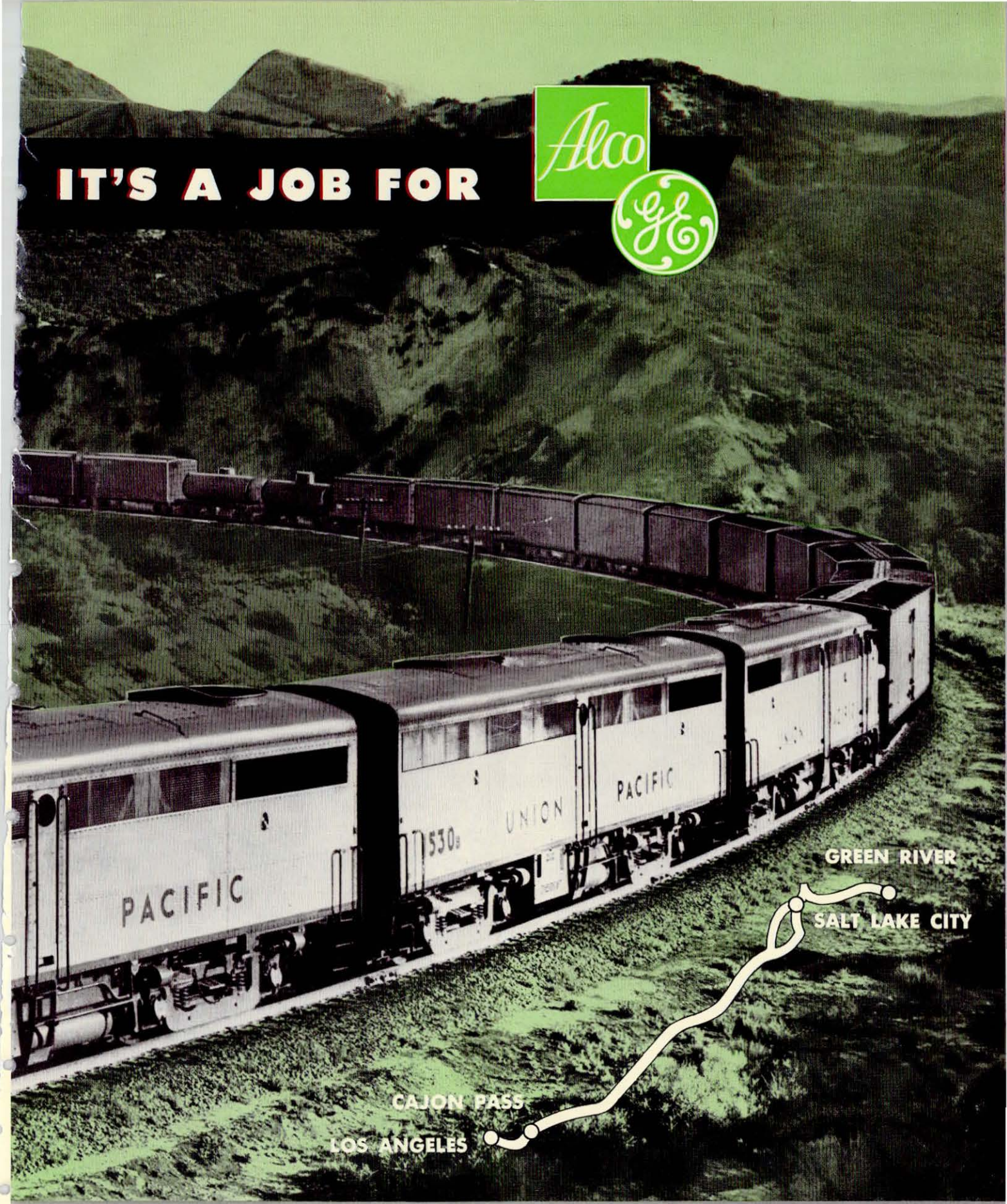
The Union Pacific is currently assigning unit after unit of Alco-G.E. power to most of its toughest jobs. All three road types—2000-hp passenger, 1500-hp freight, 1500-hp road switcher—are supplemented by 1000-hp switchers. An Alco-G.E. representative is available in your area to show you how these same diesel-electrics can increase your railroad's earning power—by doing its toughest jobs.

Built TO DO YOUR RAILROAD'S TOUGHEST JOBS

IN CANADA Alco GE IS MLW GE

Alco GE

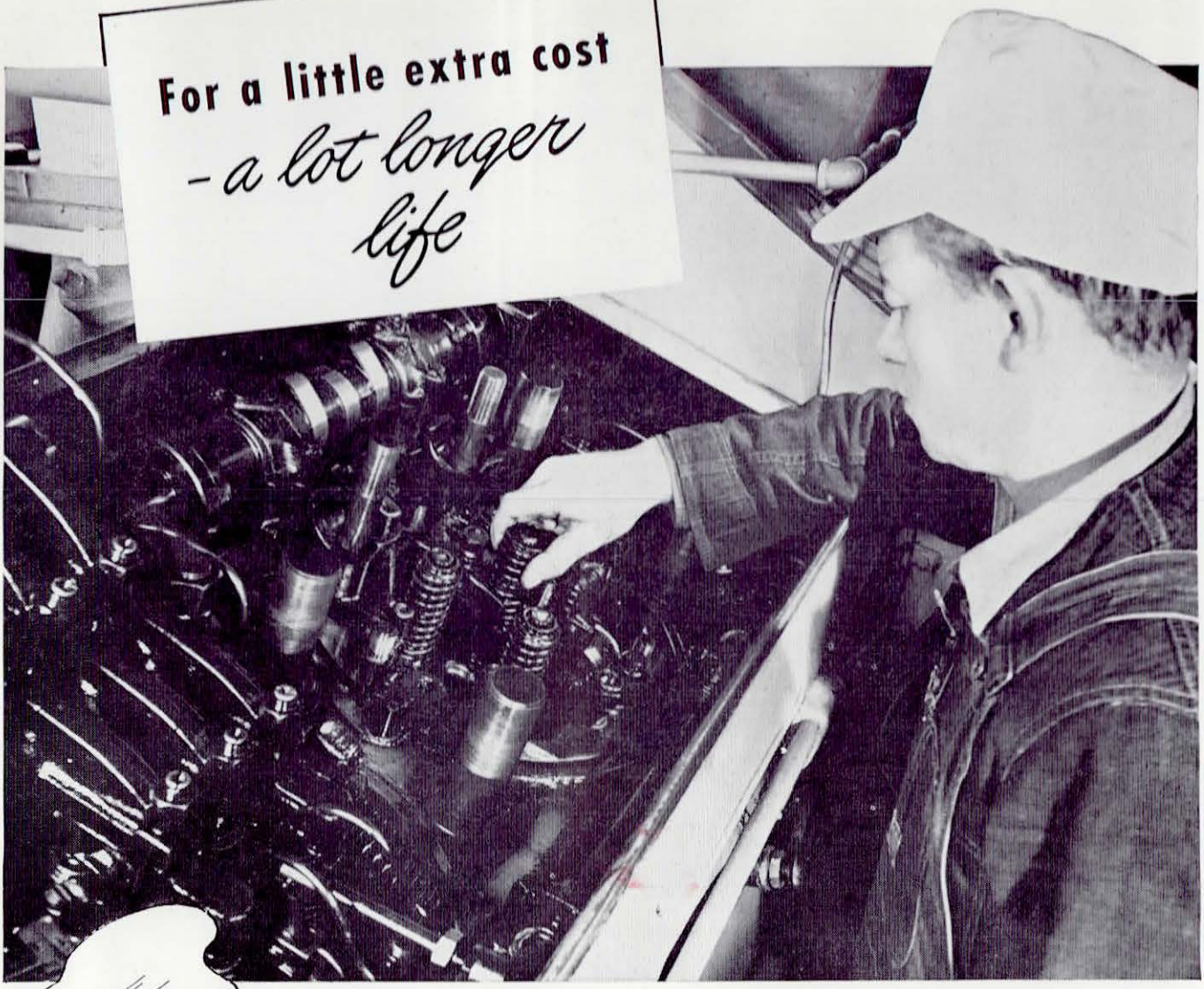
AMERICAN LOCOMOTIVE

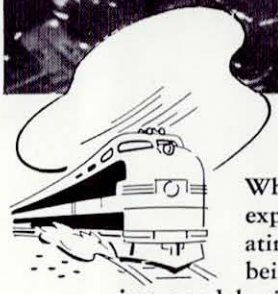


and GENERAL ELECTRIC

113-222

For a little extra cost
– a lot longer life





When you consider the tremendous expense to railroads caused by operating time lost while equipment is being shopped for repairs, isn't it just good business practice to try to reclaim some of that outlay?

Here's one way to do it—use Republic Alloy Steels for vital working parts subject to severe service.

For many years, these tough, strong, wear-resisting steels definitely have proved in steam locomotive service that a little extra paid for steel means longer life of equipment, less need for repairs and lower maintenance costs.

Now, they're demonstrating their money-saving ability in working parts of Diesels—in gears, studs, bolts, connecting rods, wrist pins, crankshafts, camshafts, valves, springs, bearings and other mechanical items.

A Republic metallurgist is ready to tell you what these steels can do for YOU. Write us.

REPUBLIC STEEL CORPORATION
Alloy Steel Division • Massillon, Ohio
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, N.Y.

REPUBLIC STEEL
REG. U.S. PAT. OFF.

Republic **ALLOY STEELS**

Other Republic Products include Stainless, High Strength and Carbon Steels—Sheets—Plates—Pipe—Bolts, Nuts and Rivets—Boiler Tubes

1849 ★ 1949

EXIDE CONGRATULATES THE BURLINGTON ON ITS 100TH ANNIVERSARY

One hundred years ago this year the first contract was awarded for the construction of what is now the great Burlington system. Less than a year later trains were in operation between Turner Junction and Batavia. Then with amazing speed, miles after miles of track were laid . . . moving steadily westward until they joined the Great Lakes and the Rockies.

The Burlington's contribution to the development of the Middle West is one of the high points in American progress. Today, the rich area it serves is the breadbasket of the world. And the "Way of the Zephyrs" has become "an essential link in transcontinental transportation."

From the early days of storage batteries, Exide has been serving the Burlington . . . powering signal systems, lighting and air-conditioning passenger cars, cranking the big Diesels and performing other storage battery tasks.

Exide
BATTERIES

"Exide" *Reg. Trade-Mark U. S. Pat. Off.*

1888...Dependable Batteries for 61 Years...1949

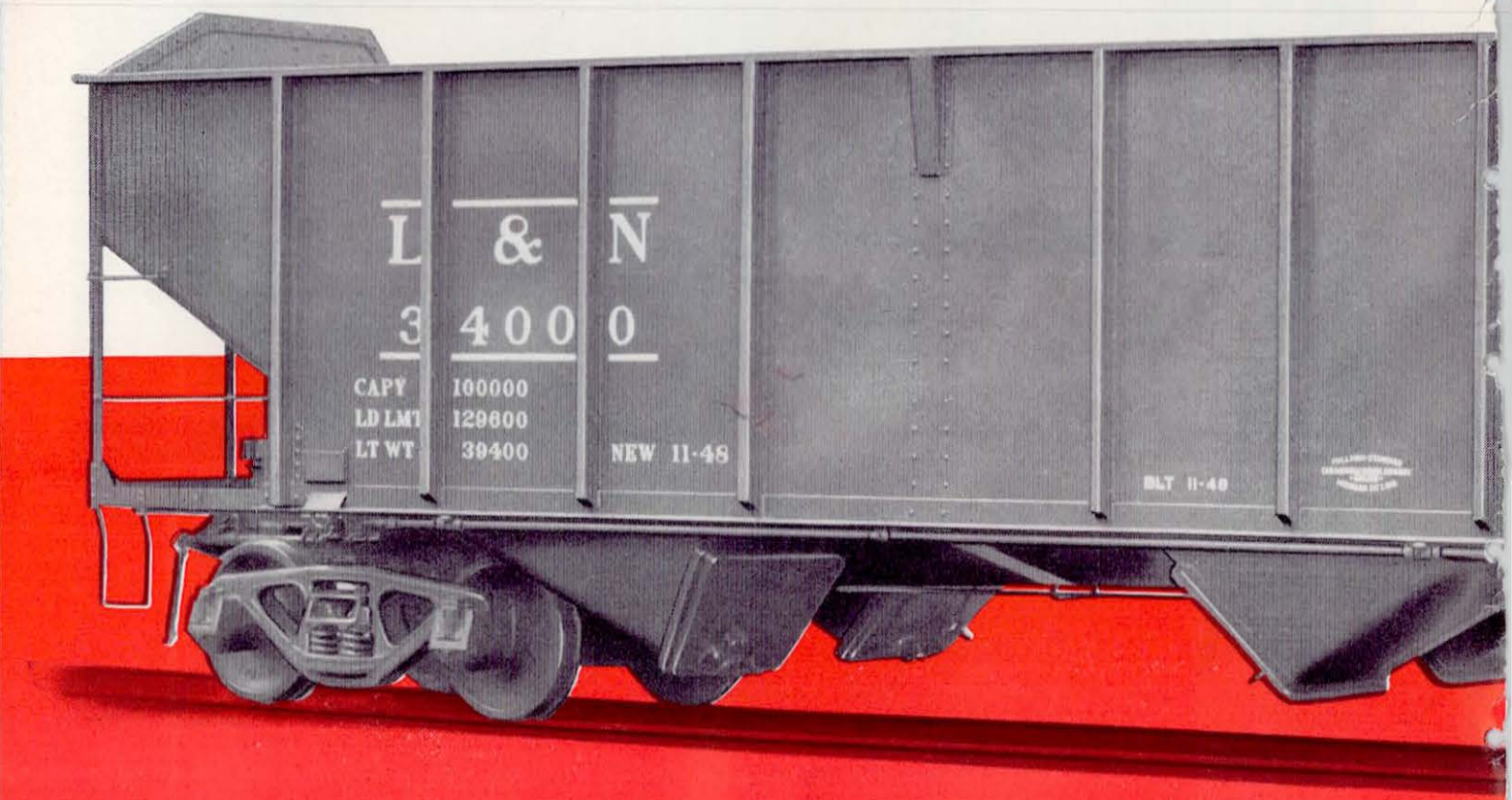
THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • *Exide Batteries of Canada, Limited, Toronto*

BULLETIN

Pullman-Standard is now in position to furnish the fabricated parts required for major overhaul and repair operations on all types of cars. Shop capacity is available for pressing, punching, shearing and forging.

2,000 L&N

HIGH QUALITY ...



● Many features of the newly designed Pullman-Standard welded Hopper Car are embodied in the lot now building for the Louisville & Nashville Railroad . . . the most noticeable point of difference being the characteristic L & N Hopper Car end.

These modern, fast-clearing coal carriers are built to stand the gaff of heavy traffic conditions. They are thrifty in maintenance.

Extensive use of welding lightens car weight and seals against corrosion; provides smooth interiors for chute-like dumping action. Pullman-Standard Hopper Cars deliver top value for your equipment dollar.

Welded Hopper Cars

EFFICIENT···ECONOMICAL

Fifty-ton welded hopper car built for Louisville & Nashville Railroad—one of a total of 4,000 hopper cars (all types) ordered by the L & N.

NOTE THESE IMPORTANT FEATURES:

1. Smooth, corner-free interior, designed at all points to speed clearing.
2. Less dead weight, more pay load per unit of motive power.
3. Economical in maintenance, because of high-quality materials and superior workmanship.
4. Improved, well-balanced design for all-over structural strength.

Pullman-Standard

CAR MANUFACTURING COMPANY

CHICAGO • NEW YORK
CLEVELAND • WASHINGTON, D. C.
PITTSBURGH • BIRMINGHAM
WORCESTER, MASS.

SAN FRANCISCO SALES REPRESENTATIVE: MARK NOBLE

SALUTING THE BURLINGTON'S

100 YEARS OF PROGRESS

THE BURLINGTON had its beginning 100 years ago when citizens of Aurora, Illinois, obtained a charter for a 12-mile line to provide rail connection with Chicago. Thus modestly began the Burlington system, which was to expand to 11,000 miles and play an important part in the development of the West.

ACROSS PRAIRIE AND MOUNTAIN, across virgin farm lands and barrier rivers, in territory thronged with warlike Indians, the Burlington pushed ever westward. With it, it brought the settlers who would set to, with axe and plough, and form the thriving communities of the Great Plains.

TRADE IN THOSE DAYS, as now, depended for its very life on the railroad. In its turn, the railroad depended on trade for continuous progress. As a supplier with a share in the Burlington's hundred-year progress, we are proud to point out that for 92 of these years the Burlington has been a customer for Adlake railroad specialties and equipment. Like the Burlington, we have found that satisfied customers are *repeat* customers.

THE Adams & Westlake COMPANY — Adlake TRADE MARK

Established 1857 • ELKHART, INDIANA • New York • Chicago

Manufacturers of Adlake Specialties and Equipment for Railway, Airway and Waterway

The Burlington...
a pioneer of Western Trails

"A NEW LINE TO THE EAST.

The Burlington & Missouri River R. R. is now extending its line to Denver, and with its eastern connection, the C. B. & Q. R. R., will shortly open to the public a through line from Colorado to the East, known as

THE BURLINGTON ROUTE

ALL UNDER ONE MANAGEMENT.

DENVER TO

Chicago, St. Louis, Omaha, Kansas City, St. Joseph, Atchison, Rock Island, and other points in Nebraska, Iowa, Illinois and the East.

The Denver Extension of 240 miles was put under way in the summer of 1881, and since that time has been steadily pushed forward, and to-day there remains less than 100 miles yet to build.

Pullman Parlor Cars and Sleepers of the latest and most handsome designs have been ordered for the new line. New and comfortable day coaches are now being prepared. The management recognizing the serious annoyance the public experience at the eating stations on the different lines, are now building commodious and handsome hotels for this purpose on its Nebraska lines, and will themselves superintend the running of them for the comfort and proper entertainment of the passengers, and charge but REASONABLE PRICES.

C. B. & Q. DINING CARS, so well known to the traveling public, will be run on all Denver trains East of Missouri River.

It is expected that the track will be ready, coaches, sleeping cars, and parlor cars, hotels &c., completed to enable the Company to

OPEN FOR BUSINESS JULY 1ST, 1882.

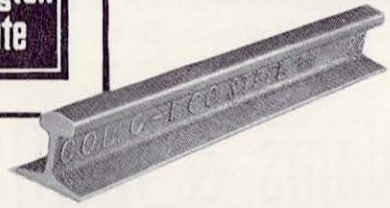
Due notice of progress will be given through the press from time to time, and any information as to distances &c., maps furnished, upon application to

OMAHA, March 10th, 1882. P. S. EUSTIS, Gen'l T'k't & Agt. B. & M. R. R.

When the Burlington puffed into Denver in 1882, it was over rails rolled at a CF&I mill. For half a century these two pioneers have cooperated with each other in building a new empire . . . the Burlington System hauling raw materials to the CF&I Pueblo mill, for producing rails and accessories used in the high speed "Way of the Zephyrs."

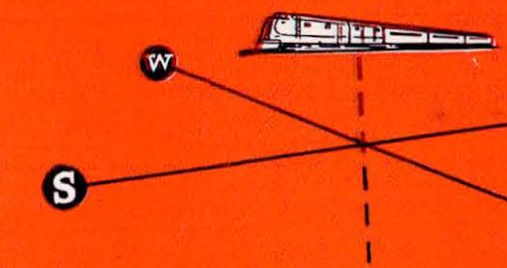
On its 100TH ANNIVERSARY, the Chicago, Burlington & Quincy can be justly proud of a transportation job well done, "Everywhere West."

Burlington Route

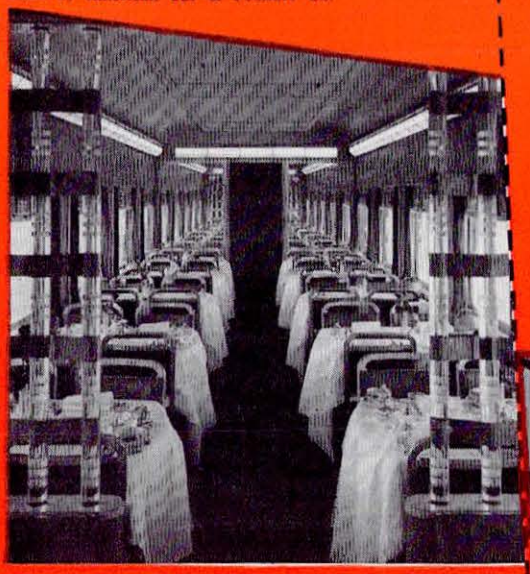


CF&I

The Colorado Fuel and Iron Corporation
General Offices: Denver, Colorado



Built by American Car & Foundry Co.



The Dining Car has added smart style and efficiency with Luminator lensed glassware fixtures engineered to provide a higher intensity glareless light for the dining table areas.

The Restaurant Lounge Car uses a fixture designed, engineered and constructed by Luminator. It projects a high intensity light to the reading and eating levels without distracting glare or shadows.

This modern Lounge Car is lighted by Luminator engineered fixtures... direct glare and contrast glare have been reduced to a comfortable degree creating a cheerful brightness. They're dustproof... provide long life ... require little maintenance.

Built by The Budd Co.

America's Finest Trains use LUMINATOR ENGINEERED LIGHTING

Built by Pullman Standard Car Mfg. Co.

Atchison, Topeka & Santa Fe
Atlantic Coast Line
Baltimore & Ohio
Boston & Maine
Canadian National
Canadian Pacific
Central of Georgia
Central R.R. Co. of N. J.
Chesapeake & Ohio
Chicago & Eastern Illinois
Chicago & Northwestern
Chicago, Burlington & Quincy
Chicago Great Western
Chicago, Indianapolis & Louisville
Chicago, Milwaukee, St. Paul & Pacific
Chicago, Rock Island & Pacific
Chicago, St. Paul, Minneapolis & Omaha
Delaware & Hudson
Delaware, Lackawanna & Western
Denver & Rio Grande Western
Erie
Florida East Coast
Great Northern
Gulf, Mobile & Ohio
Illinois Central
Kansas City Southern
Lehigh Valley
Louisville & Nashville
Minneapolis, St. Paul & Sault Ste. Marie
Missouri-Kansas-Texas
Missouri Pacific
Nashville, Chattanooga & St. Louis
New York Central
New York, Chicago & St. Louis
Norfolk & Western
New York, New Haven & Hartford
Northern Pacific
Pennsylvania
Pere Marquette
Pittsburgh & Lake Erie
Reading Company
Richmond, Fredericksburg & Potomac
St. Louis-San Francisco
Seaboard Air Line
Southern Railway System
Southern Pacific
Spokane, Portland & Seattle
Texas & Pacific
Union Pacific
Wabash

LUMINATOR

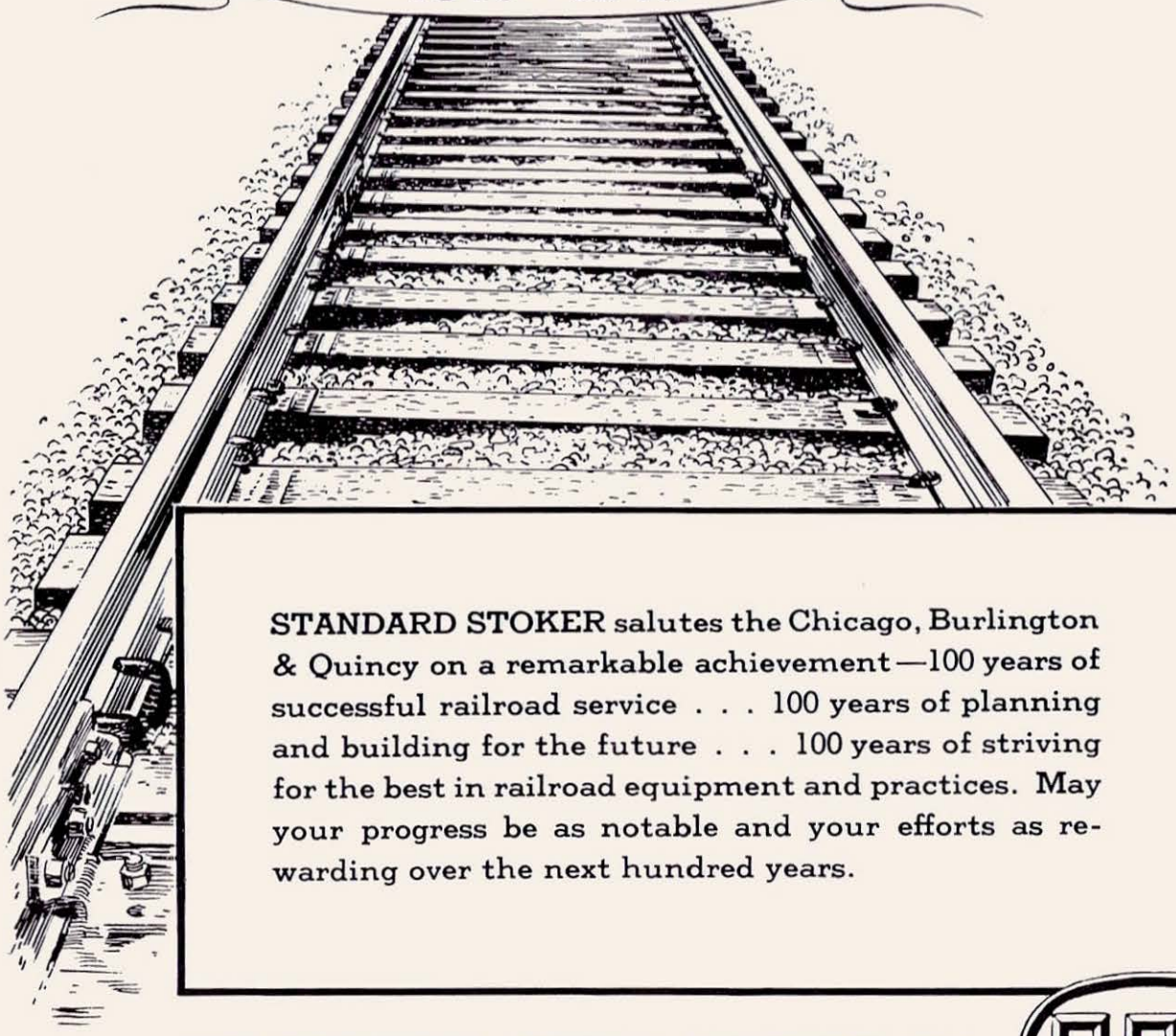
LIGHTING ENGINEERS • DESIGNERS • MANUFACTURERS

120 NORTH PEORIA STREET • CHICAGO 80, ILLINOIS

Burlington Route

11,000 MILES in 14 States

A Century of Railroad Progress
1849 - 1949



STANDARD STOKER salutes the Chicago, Burlington & Quincy on a remarkable achievement—100 years of successful railroad service . . . 100 years of planning and building for the future . . . 100 years of striving for the best in railroad equipment and practices. May your progress be as notable and your efforts as rewarding over the next hundred years.

THE STANDARD STOKER COMPANY, INC
•NEW YORK • CHICAGO • ERIE • MONTREAL•

SSC

Congratulations

to the BURLINGTON

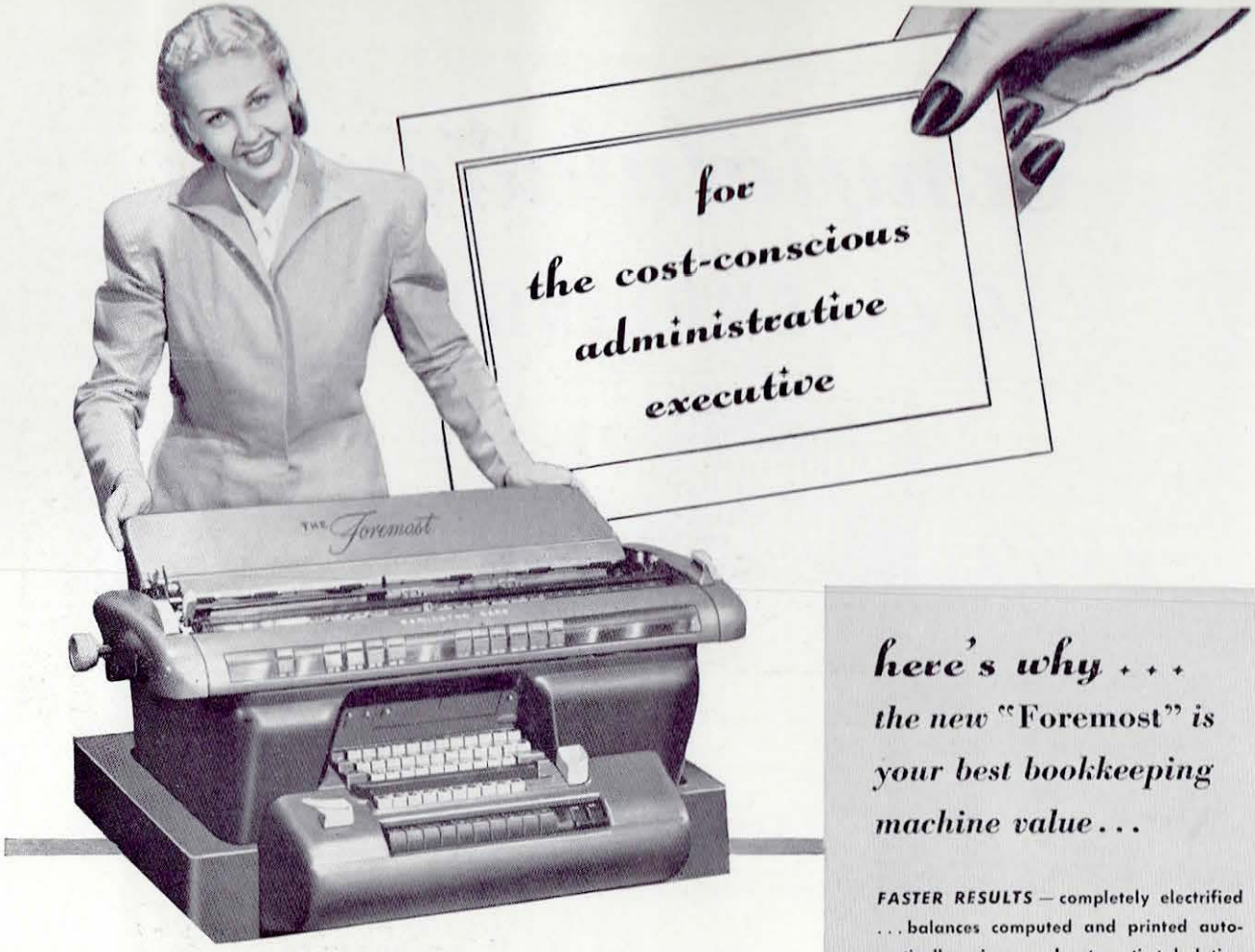
1849 Burlington Route Everywhere West *1949*

General Steel Castings salutes the Burlington Railroad on the completion of One Hundred years of service to the nation. To this pioneer of progressive railroading throughout the last 100 years, we send best wishes for even greater successes in the century to come.

We are proud to have been able to serve the Burlington for over forty years with Commonwealth Cast Steel Products for locomotives and passenger cars.

GENERAL STEEL CASTINGS

GRANITE CITY, ILL. · EDDYSTONE, PA.



Since you're the man most concerned by that steadily rising curve labeled "operating costs," you're constantly searching for machines and methods that will help reduce expenses.

That's why Remington Rand now invites you to see the new "Foremost" bookkeeping machine in action.

New from core to keyboard, this completely electrified machine produces *all* your accounting records with new efficiency. New mechanical features speed every machine operation... new functional design simplifies each operator motion. RESULT: your accounts receivable, payrolls and accounts payable are turned out faster—with less effort—at lower cost.

But see for yourself how the "Foremost" bookkeeping machine will force down *your* "operating costs" curve. Call your local Remington Rand representative today.

"Fashioned for Business Administration" tells the complete story. Write for your free copy to Remington Rand Inc., Dept. RA-2, 315 Fourth Ave., New York 10.

here's why . . .

the new "Foremost" is your best bookkeeping machine value . . .

FASTER RESULTS — completely electrified . . . balances computed and printed automatically . . . improved automatic tabulation and column selection . . . new high speed spacing, timing and carriage return.

SIMPLER OPERATION — "one-operation" insertion, collation and alignment of forms . . . standard keyboard with only one set of numerals . . . new organ type, finger-grooved keys respond with uniform impressions . . . completely visible writing line . . . new magnified register totals assuring easier reading and transcribing.

PRODUCES ALL RECORDS — designed for accounts receivable, payrolls, accounts payable or any other record . . . "snap-on" type registers easily repositioned for new applications . . . quickly adaptable to column arrangement on any accounting form.

FUNCTIONAL DESIGN — fashioned for maximum utility plus streamlined beauty of lines . . . all moving parts and mechanisms enclosed . . . minimum of feature keys and levers . . . durable unit construction.

THE NEW *Remington Rand* BOOKKEEPING MACHINE

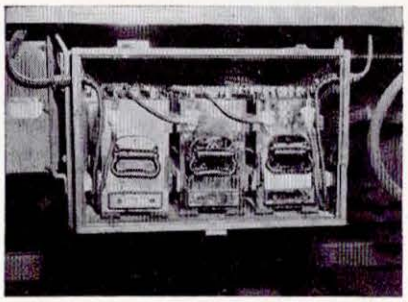
NEW SUBWAY CARS NOW GOING INTO SERVICE

NEW YORKERS are being treated to a new kind of subway car . . . the best illuminated, best ventilated and safest in which they have ever ridden. The New York City Transit System has ordered 750 such cars as part of its postwar improvement program, and many are already in daily use.

The nine-car train shown above is representative of the first lot of 100 new cars to be delivered and placed in service on the Queensboro Line of the IRT Division. Each car employs a 32-volt battery circuit to provide unfailing power for tail lights on both ends of the train, and to permit multiple-unit operation of traction motors and brakes. The 32-volt circuit is also used to operate emergency lights during interruption of third rail power, and to interlock door-closing and traction-motor controls so that the train cannot be started until all doors are closed and locked.

Power for these all-important circuits can always be depended upon. It is supplied normally by a 1-kw motor-generator in each car; and during interruption or overloading of the generator, by an EDISON Nickel-Iron-Alkaline Storage Battery.

LONG LIFE MEANS LOW COST!



THE 750 new subway cars will be fitted with 24-cell B4H EDISON Batteries, installed in three 8-cell carlighting trays as illustrated here.

EDISON 32-volt batteries are standard equipment on all New York subway cars. Many installed over 20 years ago are still in first-class condition and give indications of more years of dependable service.

EDISON Batteries last and last, and so through the years cost less and less. If you do not already use them, get price quotations from us; you may find prices lower than you think; cost per year less than you pay now.

EDISON
Nickel · Iron · Alkaline
STORAGE BATTERIES

EDISON STORAGE BATTERY DIVISION
of Thomas A. Edison, Incorporated
West Orange, New Jersey

Featured Attractions on FAMOUS TRAINS...

NP Automatic

End door operators!

• Prominently featured on famous trains is the finger-touch action of NP Automatic End Door Operators. Magically easing passage from car to car, they have earned the approval of railroad officials quick to utilize the advantages offered by this modern method of door control.

Passengers appreciate the convenience of doors that open safely and surely at the lightest touch, then close gently behind them. Operating and maintenance personnel approve the sturdy simplicity of the compact door-operating mechanism . . . and its reliable, trouble-free performance.

NP Automatic End Door Operators are adaptable to new or remodeled coaches, with swinging or sliding doors. Their operating cycle can be pre-set to meet various timing requirements. And they are backed by the full manufacturing and service facilities of the National Pneumatic Company, for nearly fifty years the outstanding leader in door control equipment.

For complete information, let us send you Publication No. 1063.

NATIONAL PNEUMATIC COMPANY

Graybar Bldg., New York • McCormick Bldg. Chicago • Rahway, New Jersey

Represented in Canada by Railway & Power Engineering Corp., Ltd., Toronto

WORLD'S LARGEST MANUFACTURER OF DOOR CONTROL EQUIPMENT

HATS OFF TO BURLINGTON ON COMPLETION OF A CENTURY OF RAILROAD PROGRESS!

Headline highlights of 15 years of high-speed train developments on the Chicago, Burlington and Quincy Railroad, as revealed in Timken Railway Bearing Advertising, 1934-1949.

1934
"Every Axle Journal Box On The New Burlington 'Zephyr' Is Timken Bearing Equipped."

1936
"122 Miles An Hour On Timken Bearings." (Mark Twain Zephyr)

"Four More 'Zephyrs' Go On Timken Bearings."

"'Zephyrs' Go A Million Miles On Timken Bearings." (first 4 trains)

"The Entire 'Zephyr' Fleet Is Timken Bearing Equipped." (first 8 trains)

"'Denver Zephyr' Breaks World Record Between Chicago and Denver." (1,017 miles non-stop in 12 hours, 12 minutes, 27 seconds)

1937
"Timken Bearing Equipped 'Zephyrs' Roll Up Nearly 4,000 Miles Per Day." (first 8 trains)

1939
"The Ninth Burlington Zephyr Goes On Timken Bearings." (General Pershing Zephyr)

1945
"25 Million Miles Ago." (the first Zephyr went into service)
"All Burlington Dome Cars Operate On Timken Bearings."

1947
"40 New Vista Dome Cars Go On Timken Bearings."
All 87 cars of new California Zephyrs operated jointly by Chicago, Burlington and Quincy; Denver & Rio Grande Western; and Western Pacific railroads equipped with Timken bearings in all journals.

1948
"3,695,943 Miles On Timken Bearings." (travelled by Diesel-electric locomotive No. 9907-A hauling the "Denver Zephyr")

Following is a complete list of Timken Bearing Equipped rolling stock on the Burlington Road.

STEAM LOCOMOTIVES

28 - Type 4-8-2—Engine Trucks
32 - Type 4-8-4—All Axles, Reciprocating Parts and Tenders
4 - Type 4-8-4—Engine Trucks, Drivers, Reciprocating Parts and Tenders
4 - Type 4-8-4—Tenders
14 - Type 4-6-4—All Axles and Reciprocating Parts
5 - Type 4-6-4—Rods
18 - Type 2-10-4—Engine Trucks, Drivers and Reciprocating Parts
1 - Type 2-10-4—Engine Trucks
10 - Type 2-10-4—Tenders
58 - Type 2-10-2—Engine Trucks

PASSENGER CARS

245 Passenger Train Cars of All Types Including Streamlined Trains

DIESEL LOCOMOTIVES

11 Passenger Locomotives

FREIGHT CARS

10 - 70-Ton Hopper Cars

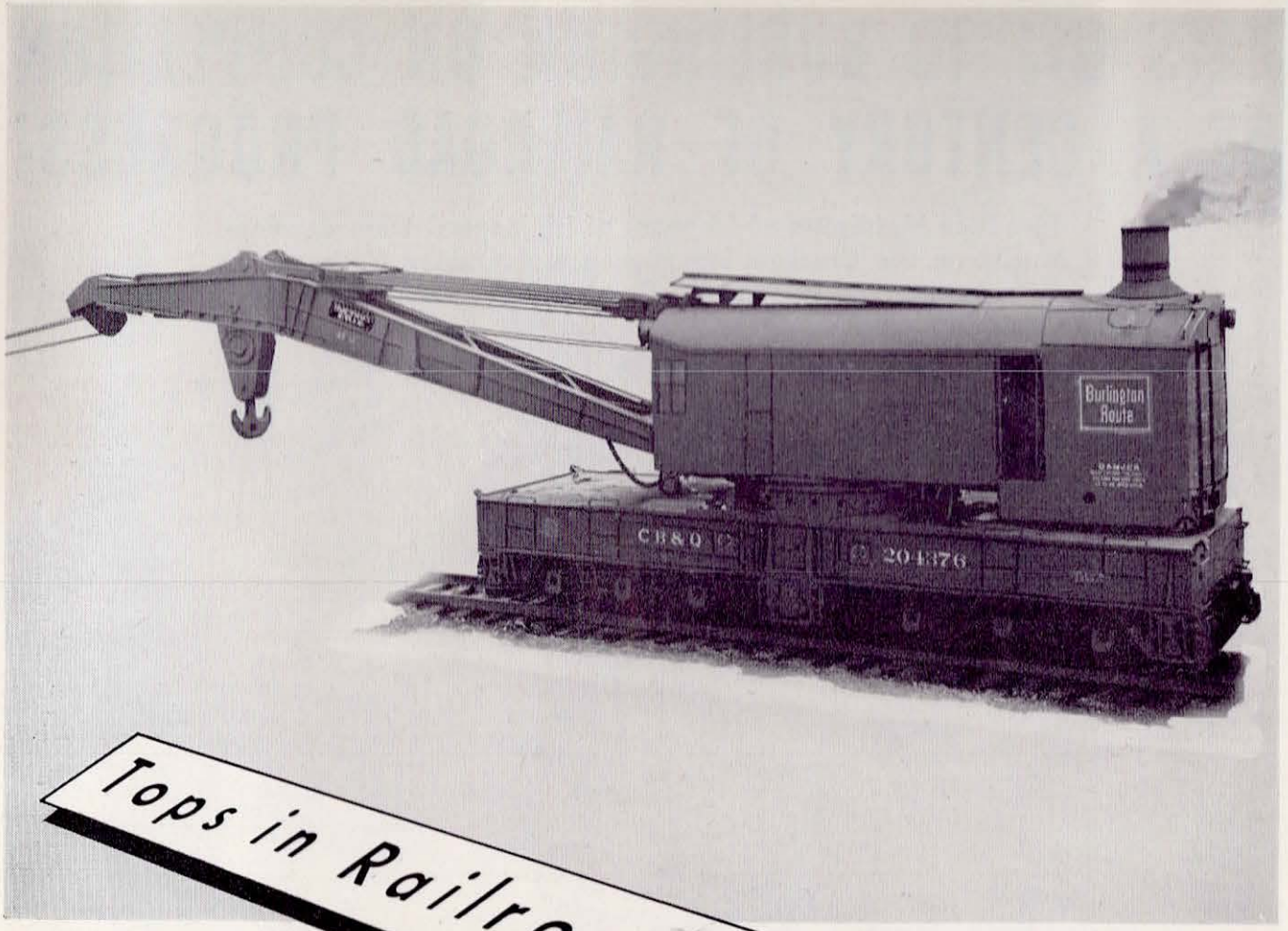
MISCELLANEOUS

2 Scale Test Cars

THE TIMKEN ROLLER BEARING COMPANY
CANTON 6, OHIO - CABLE ADDRESS "TIMROSCO"

TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
RAILWAY ROLLER BEARINGS

NOT JUST A BALL NOT JUST A ROLLER THE TIMKEN TAPERED ROLLER BEARING TAKES RADIAL AND THRUST LOADS OR ANY COMBINATION



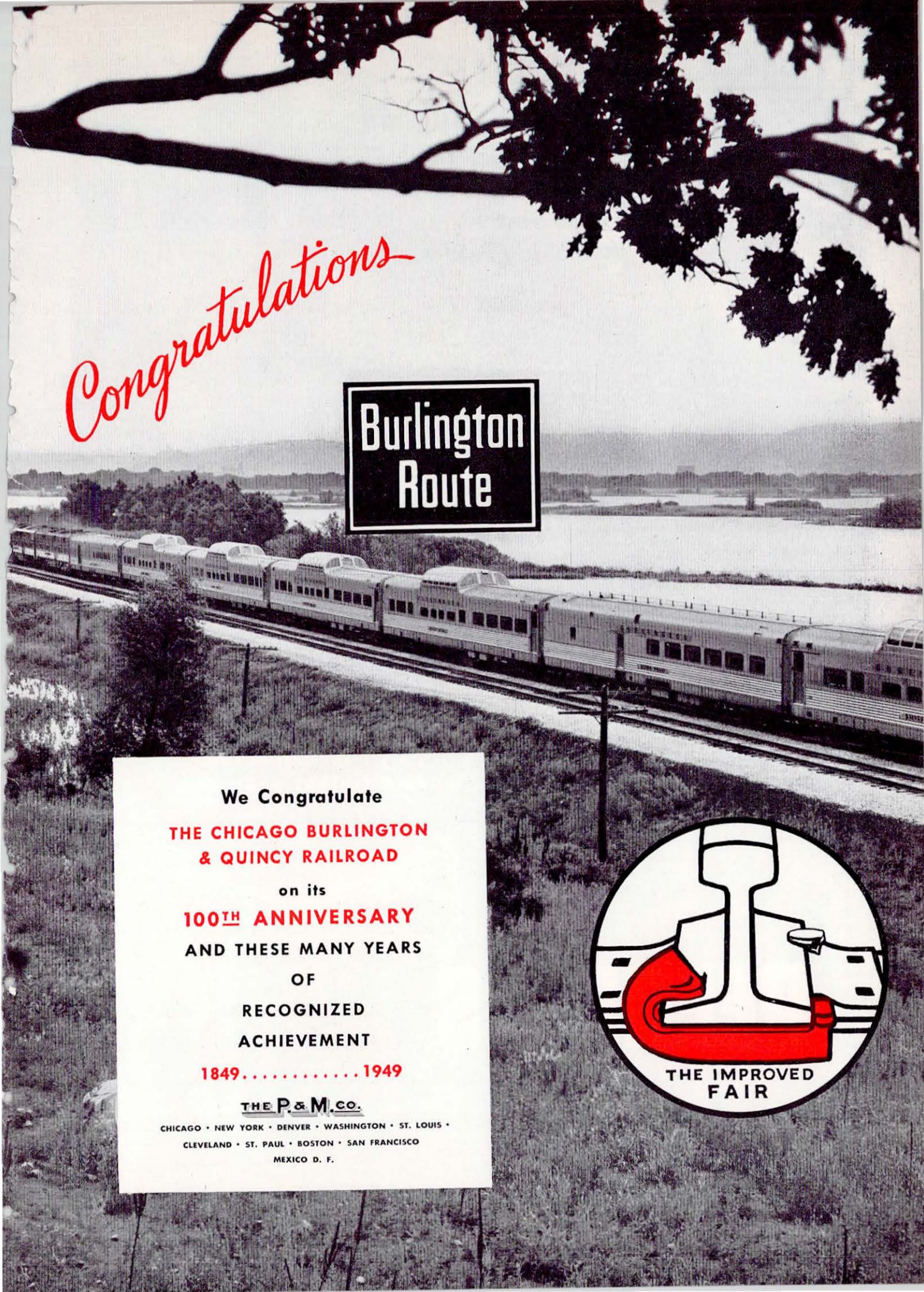
Tops in Railroad Service

THAT GOES not only for the Burlington Railroad, celebrating its 100th year of progress and development this year, but also for Bucyrus-Erie Railway Cranes like the 250-ton model shown above. Many of America's most famous railroads, like the Burlington, depend on Bucyrus-Erie cranes to meet their exacting requirements. They know by experience that they can rely on the strength, stability and safe operation of Bucyrus-Eries. Their low center of gravity, high lifting capacity per pound of weight, ample power under perfect, instantly responsive control, dependable construction and "years ahead" design all contribute to outstandingly efficient crane performance

BUCYRUS ERIE

SOUTH MILWAUKEE, WISCONSIN

73Y49



We Congratulate

THE CHICAGO BURLINGTON & QUINCY RAILROAD

on its

100TH ANNIVERSARY

AND THESE MANY YEARS

OF

RECOGNIZED

ACHIEVEMENT

1849.....1949

THE P. & M. CO.

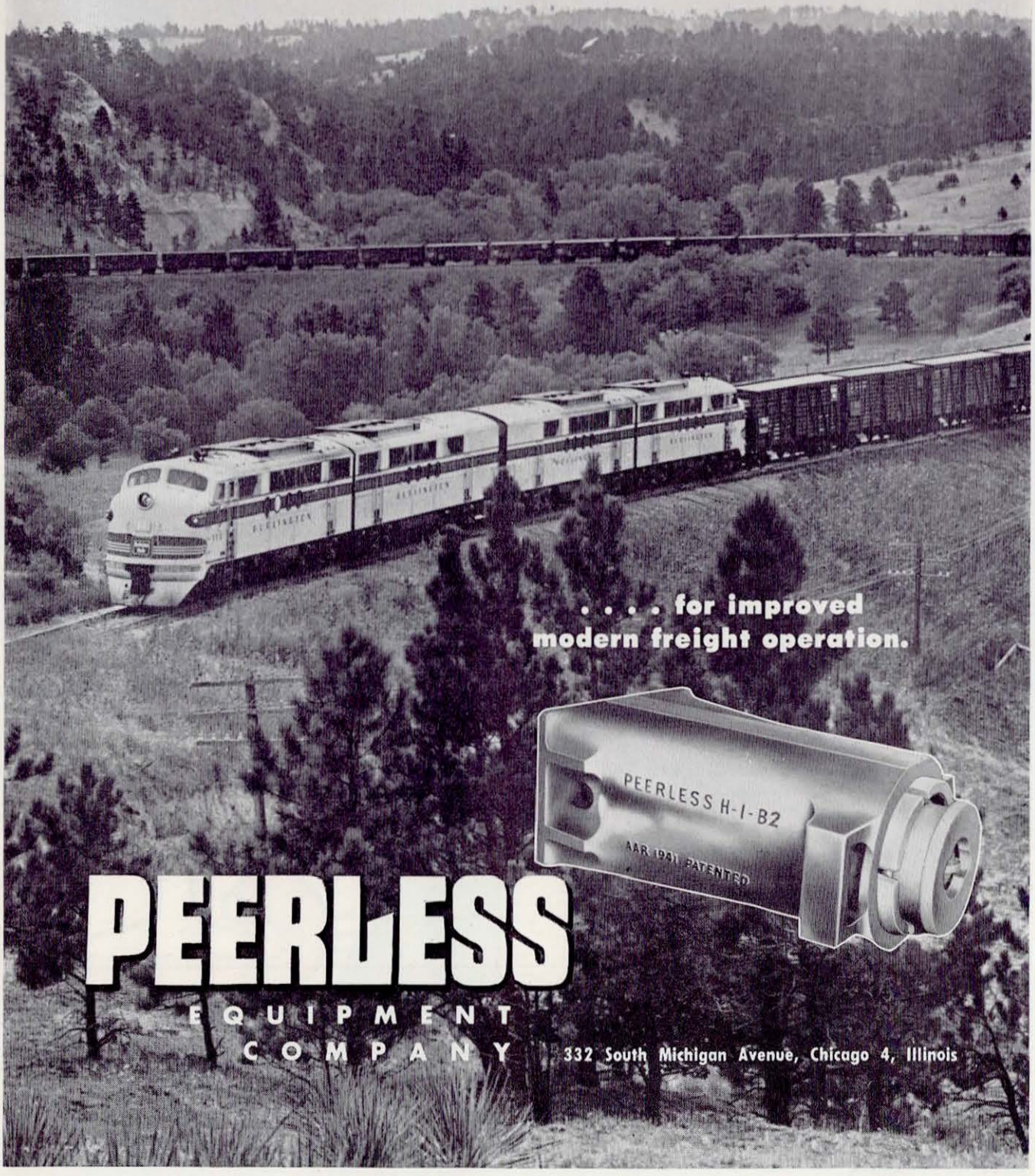
CHICAGO • NEW YORK • DENVER • WASHINGTON • ST. LOUIS • CLEVELAND • ST. PAUL • BOSTON • SAN FRANCISCO

MEXICO D. F.

Saluting the Burlington

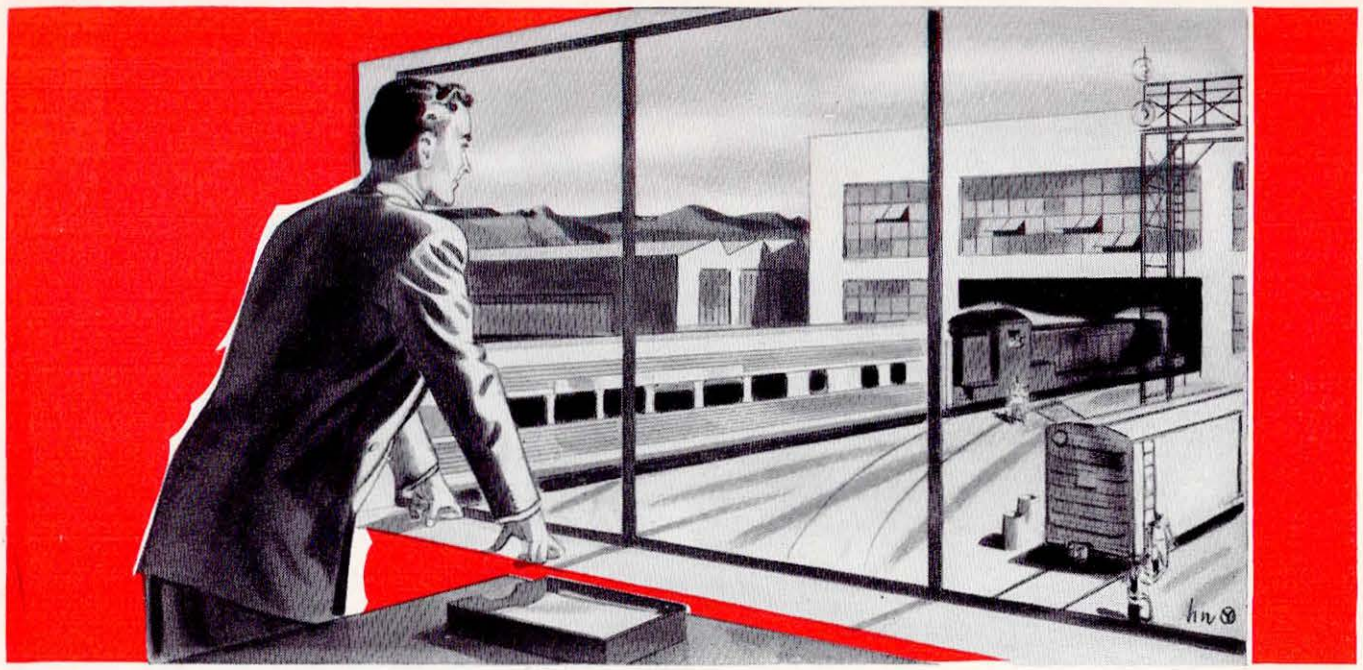
with congratulations on the accomplishments of a century, and best wishes for a flourishing future.

Burlington Route



PEERLESS EQUIPMENT COMPANY

332 South Michigan Avenue, Chicago 4, Illinois



LESS "STAND-BY" TIME

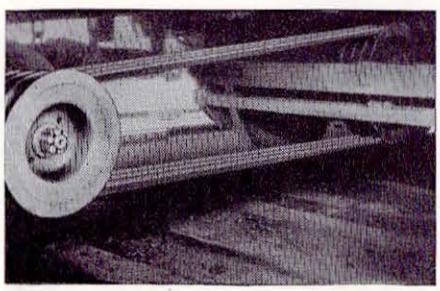
More Hours in Service

WHEN YOUR UNDER-CAR DRIVE IS V-BELT DRIVEN

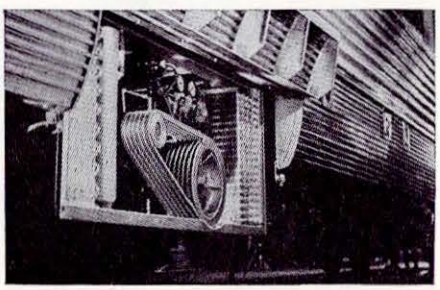
Fewer yard stops, more road time . . . that's the record of Dayton under-car V-Belt Drives! As a matter of fact, *in over 16 years*, a power failure due to the mechanical failure of a *Dayton V-Belt Drive* has not been reported. You just can't beat Dayton Drives for transmitting electric power economically and with unfailing dependability to passenger cars, diners, Diesels or cabooses. Easy to install, convenient to maintain . . . smooth and quiet in performance, Dayton V-Belt Drives are your best investment for dependable, trouble-free operation. Let us show you an easier, more profitable way to more miles of trouble-free power transmission. Write *The Dayton Rubber Company, Railway Division, Dayton 1, Ohio.*

HERE ARE 7 MAIN REASONS Dayton V-Belt Drives Provide the Best Power Transmission Service

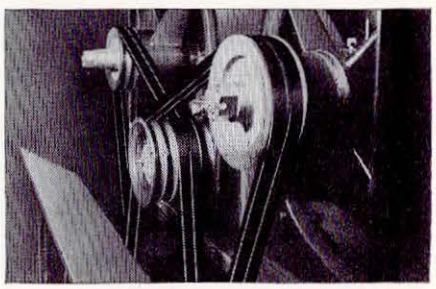
1. ***Dependable***... in over 16 years a mechanical failure has never been reported.
2. ***Protect Equipment*** . . . by flexible, cushioned connection between axle and driven unit.
3. ***Economical***... No expensive truck changes, or special axles needed.
4. ***No Duplicate Equipment Necessary*** . . . when wheel changes must be made only the axle pulleys need be removed.
5. ***Cut Maintenance Costs*** . . . need little servicing—reduce maintenance costs.
6. ***Minimum Axle Weight*** . . . the car axle carries the lightest load.
7. ***Easy to Install***... dependable in operation.



Dayton V-Belt Car Lighting Drives always provide bright, steady lights.



Compressors perform at rated capacity with Dayton V-Belt Drives.



Designed for efficient cooling and uninterrupted service for Diesels.

Dayton Rubber

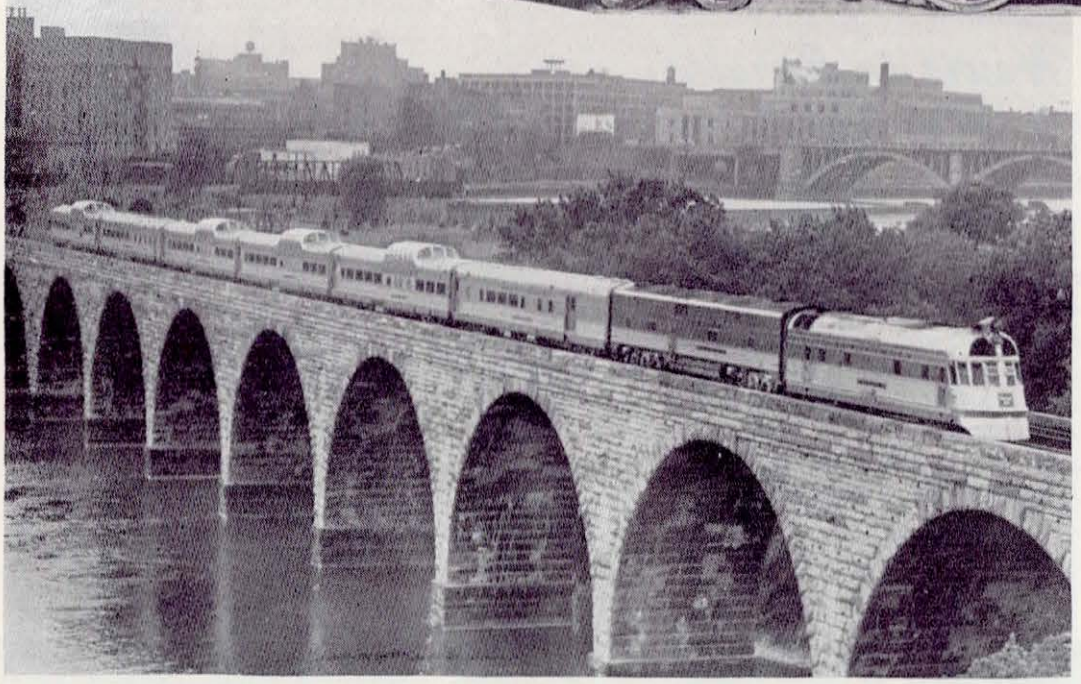
THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

A CENTURY OF

Burlington Route

GOING PLACES

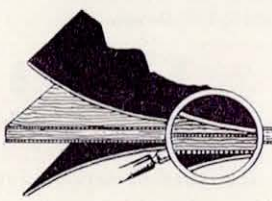
CHICAGO & BURLINGTON
Rail Road Line!
(Chicago, Burlington and Quincy, Central Mili-
tary Tract, and Peoria and Oquawka
Rail Roads.)
Is now completed, and Trains run the entire dis-
ance, from BURLINGTON, IOWA, TO CHICAGO
WITHOUT CHANGE OF CARS.
THE MOST DIRECT ROUTE TO
ICAGO, NEW YORK, B
PHIA



An early ad (1855) and a contemporary Burlington locomotive, the "North Wind",—a rugged predecessor of the sleek modern Zephyr Diesels.

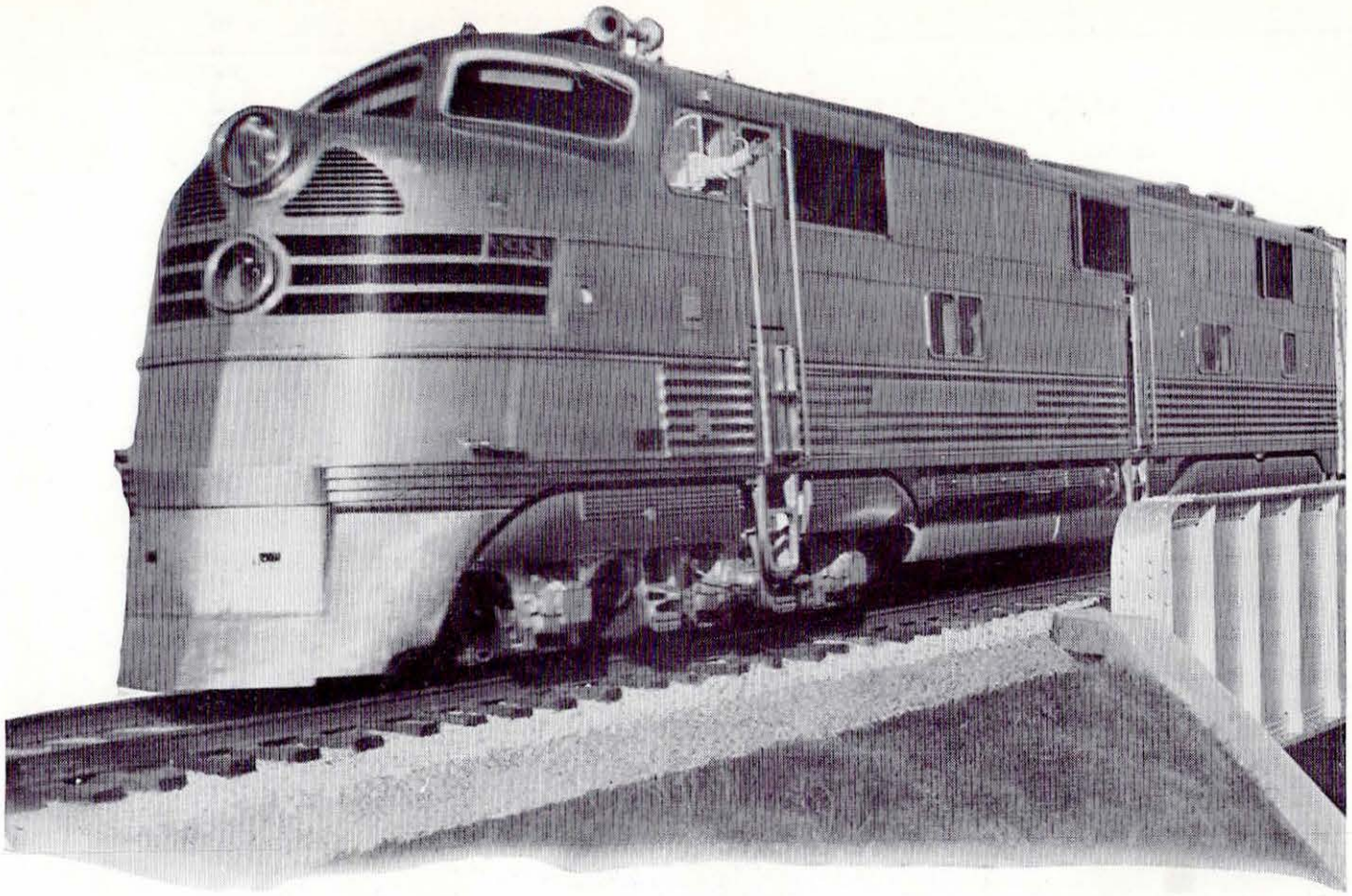
Most outstanding of the Burlington's many contributions to rail transportation has been the modern lightweight streamlined Diesel-powered luxury passenger train, which it originated with the Pioneer Zephyr in 1934. Since then, MET-L-WOOD sheathing and doors have been standard on the Diesels of the famous Zephyr fleet.

MET-L-WOOD (METAL BONDED TO PLYWOOD), still in its "twenties", pays tribute to the Burlington's fivescore years of outstanding growth and development as a leader in American railroading. The entire staff of MET-L-WOOD Corporation is proud of the opportunities it has had to serve the Burlington, and extends its sincere good wishes for the years ahead.



MET-L-WOOD CORPORATION

6755 West 65th Street, Chicago 38, Illinois



To C. B. & Q...we wish

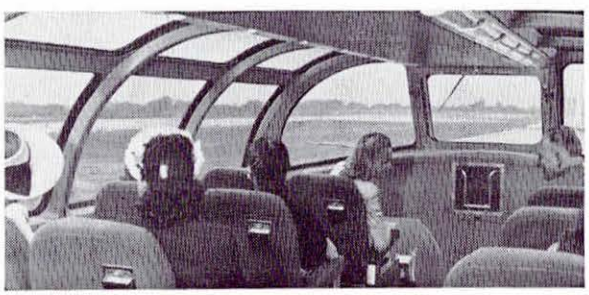
a clear track ahead

for the next 100 years!

TO THE PEOPLE OF THE BURLINGTON . . . who have devoted so much to the building of America's great railroad transportation system in the last one hundred years . . . Johns-Manville extends sincere congratulations for a job *well done.*

May you have a clear track ahead for further growth and prosperity during the next hundred years as well!

We are proud that our association with the C. B. & Q. has been so pleasant down through these many years.

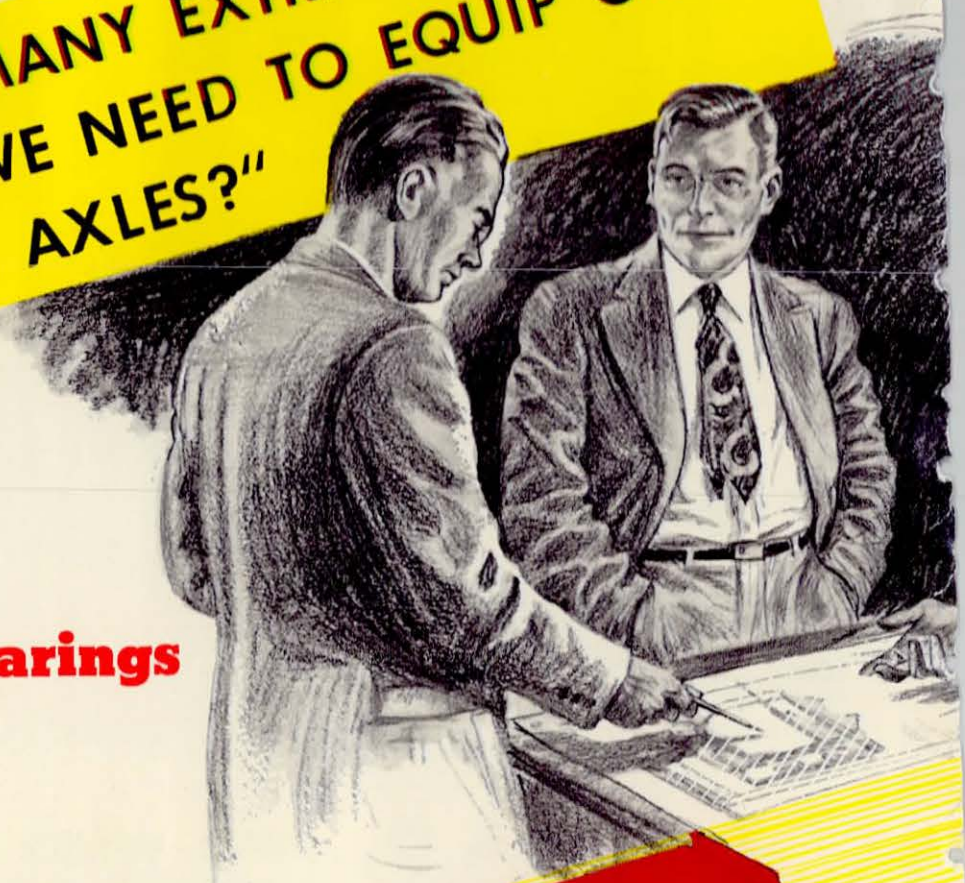


JM PRODUCTS

Johns-Manville

91 YEARS OF SERVICE TO TRANSPORTATION

"HOW MANY EXTRA BEARINGS WILL WE NEED TO EQUIP OUR SPARE AXLES?"



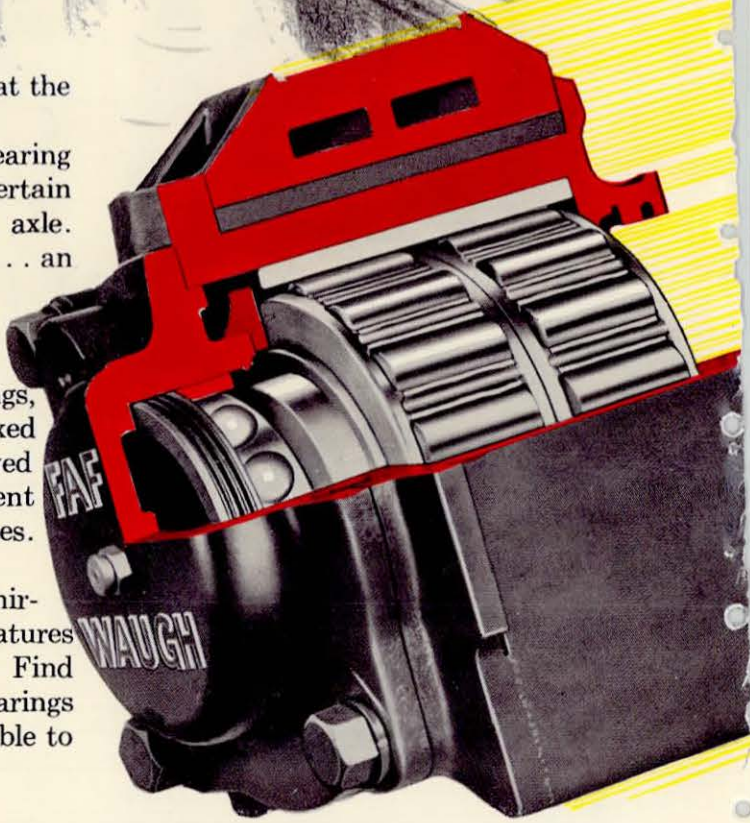
These finer bearings actually cost you less

SEEKING economies, buyers sometimes forget that the real costs are the over-all costs over the years.

In point: assume that for every anti-friction bearing equipped car you have one spare axle, and under certain circumstances, two spare bearings for each spare axle. That's *200 spare bearings* for every hundred cars . . . an inventory which mounts into money!

But with Fafnir-Waugh Twin Bearings, you will never need all those extra bearings. You are spared that huge investment. With Fafnir-Waugh Bearings, only the lubrication seal and inner race are affixed to the spare axle. The bearing itself can be removed intact during wheel changes and applied to replacement axles as quickly and easily as plain journal brasses. That means money *saving* and time *saving!*

All these economies are but a small part of Fafnir-Waugh superiority. Ask to be shown the many features that mark Fafnir-Waugh engineering leadership. Find out for yourself on your own railroad why Twin Bearings are the best engineered bearings ever made available to the railroad industry.



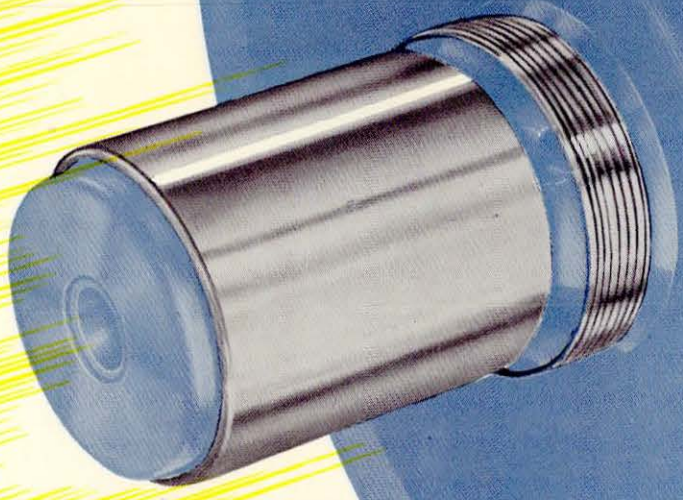
FAFNIR-WAUGH BEARINGS DIVISION
WAUGH EQUIPMENT COMPANY

NEW YORK • CHICAGO • ST. LOUIS • SAN FRANCISCO

"THAT'S WHERE THESE FAFNIR-WAUGH TWIN BEARINGS REALLY SAVE US MONEY!"

WITH FAFNIR-WAUGH,

SPARE AXLES NEED NO SPARE BEARINGS



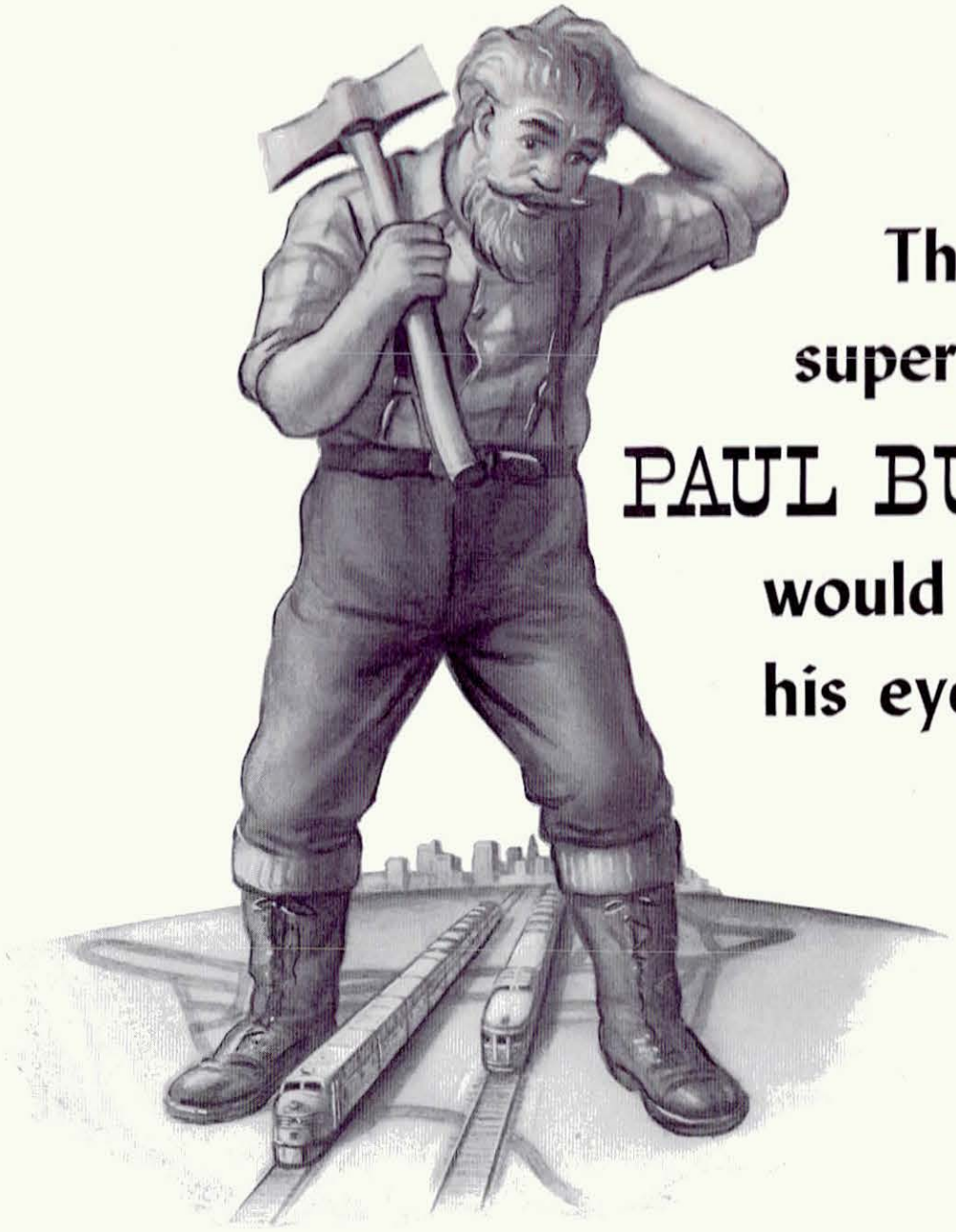
With Fafnir-Waugh Twin Bearings, the lubrication seal and the inner race are shrunk on the axle. These parts are the only "spares" required for spare axles. The bearing itself is applied and removed as easily as plain journal brasses . . . as easily as an old shoe. Even the wheel can be removed from the axle without removal of oil seal or inner race.

FAFNIR WAUGH

TWIN BEARINGS

FAFNIR WAUGH TWIN BEARINGS FOR RAILWAY JOURNALS

"None better... simplicity itself"



The superman PAUL BUNYAN would blink his eyes . . .

. . . IF he could TODAY look over the Burlington System with its silvery streamlined Zephyrs gliding along at better than 100 miles per hour.

HATS OFF to this great organization on its 100th Anniversary! It has been our privilege for many years to co-operate with the Burlington in its program of track maintenance.

Doubtless the next 100 years will find even more amazing progress on this "Road of Presidents."

Reade Manufacturing Company Inc.

Pioneers in Chemical Weed Control Service

EXECUTIVE HEADQUARTERS
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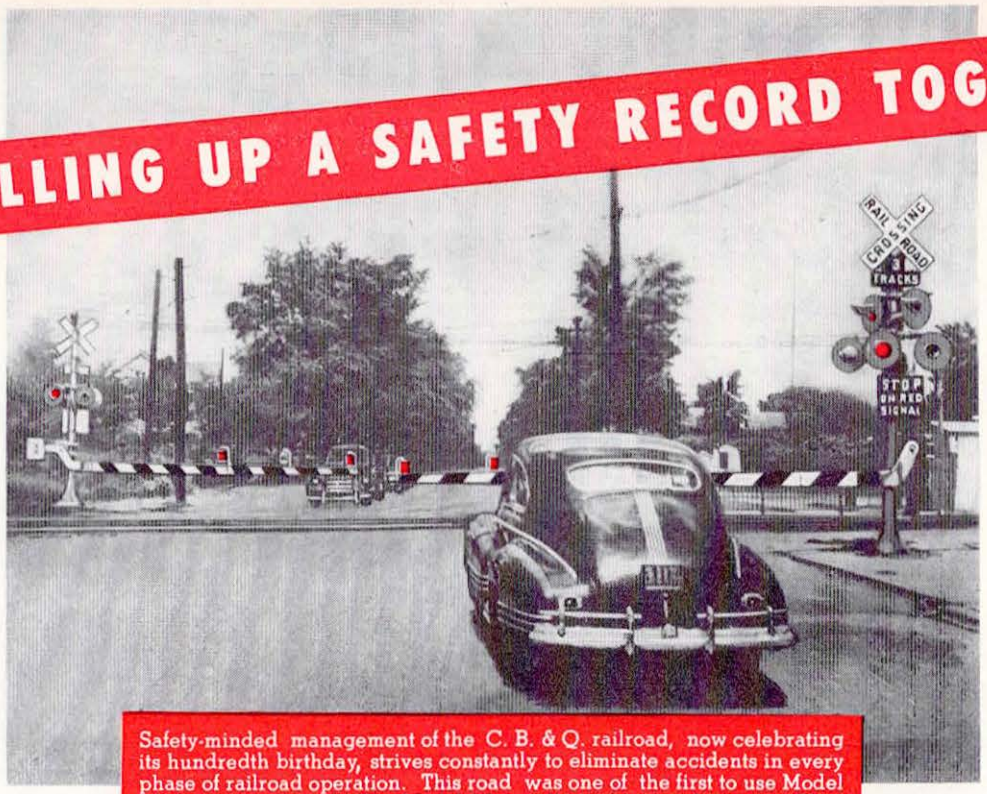
SERVICE HEADQUARTERS
9500 Cottage Grove Avenue, Chicago 28, Illinois

PLANTS AT NUMEROUS RAILROAD CENTERS

ROLLING UP A SAFETY RECORD TOGETHER



Safety-minded management of the C. B. & Q. railroad, now celebrating its hundredth birthday, strives constantly to eliminate accidents in every phase of railroad operation. This road was one of the first to use Model 10 Automatic Signals. The Model 10 installation shown above is at Clarendon Hills, Illinois, on the C. B. & Q's 3-track line.

Aware of the faster pace and increasing volume of traffic on both rail and highway, the railroads have been quick to adopt better methods of grade crossing protection. Since June, 1936, *nearly a hundred railroads* have installed MODEL 10 AUTOMATIC SIGNALS, the combination of gates, bells, and flashing lights acknowledged by traffic experts to be the most positive means to accident prevention.

To the railroads, Model 10 vigilance has brought the benefits of increased train speeds at crossings, plus substantial economies in crossing protection. To the traveling public on railroad and highway, every Model 10 installation means *positive safety—24 hours a day.*

Model 10's and the railroads they serve, are ROLLING UP A SAFETY RECORD—TOGETHER.

Here's the record:

NOT ONE FATALITY has ever occured as a result of operative failure on the part of Model 10 Signals.

The Western Railroad Supply Company and its predecessor companies have served the railroads since 1889 . . . pioneering numerous improvements in grade crossing protection, including the *first successful automatic gate.* In 1936, the WRRS Company developed the first Model 10 Automatic Signals, known everywhere today as the last word in grade crossing protection. (Model 10 *design* has been imitated, but Model 10 *performance* never duplicated.)

Model 10

AUTOMATIC GRADE CROSSING SIGNALS
PRODUCT OF
WESTERN RAILROAD SUPPLY COMPANY
CHICAGO 8, ILLINOIS

LEADING MANUFACTURER OF GRADE CROSSING SAFETY DEVICES—MAKER OF RAILWAY SIGNALING ACCESSORIES

U. S. Pat. Nos. 2,137,196; 2,362,710; 2,372,579. Pat'd in Canada 6-27-39

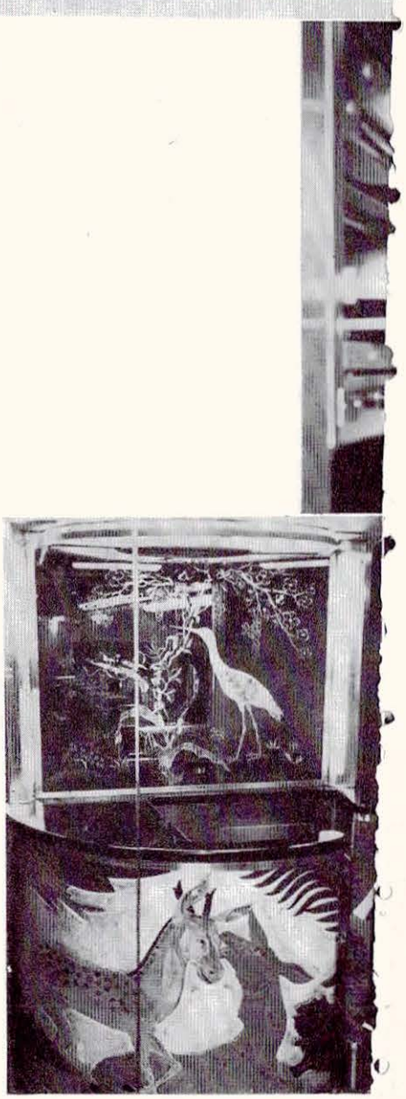
A Salute to the BURLINGTON!

Burlington Route

We congratulate The Burlington on the completion of one hundred years of service to the Nation.

FLANNERY BOLT COMPANY
BRIDGEVILLE ★ PENNSYLVANIA

Congratula
on a C



– – – ANOTHER FIRST – – –

The Steward's Desk out front in the Dining Room for better supervision of service to the patrons.

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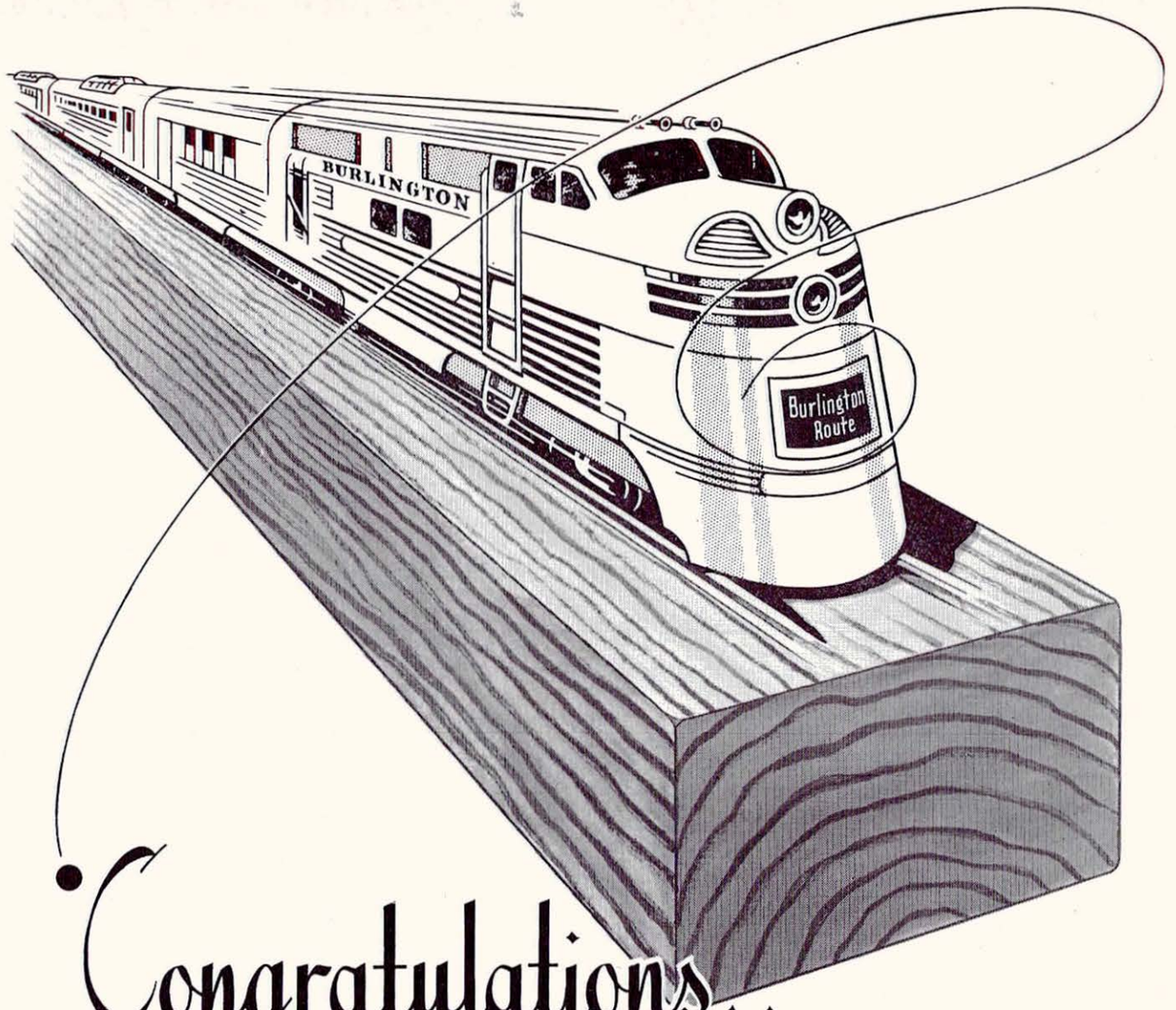


Congratulations . . .

• • • to the Burlington on your progressive and successful policy that has developed your system into one of the strongest railroads of the country. We are proud to have assisted you by furnishing a part of your cross tie, switch tie and lumber requirements for many years.

TILLER TIE & LUMBER
COMPANY

Union Life Building • Little Rock, Ark.

Scientific Design
CHAMPIO

- Perfect control of car.
- Maximum braking pow
- Positive automatic hold
- No levers to operate.
- Controlled by hand wh
- Fast take-up. 2½ turns

A.A.R. APP

THE
CHAM
RAILW

Yoloy IS HERE TODAY »

for the Cars of tomorrow

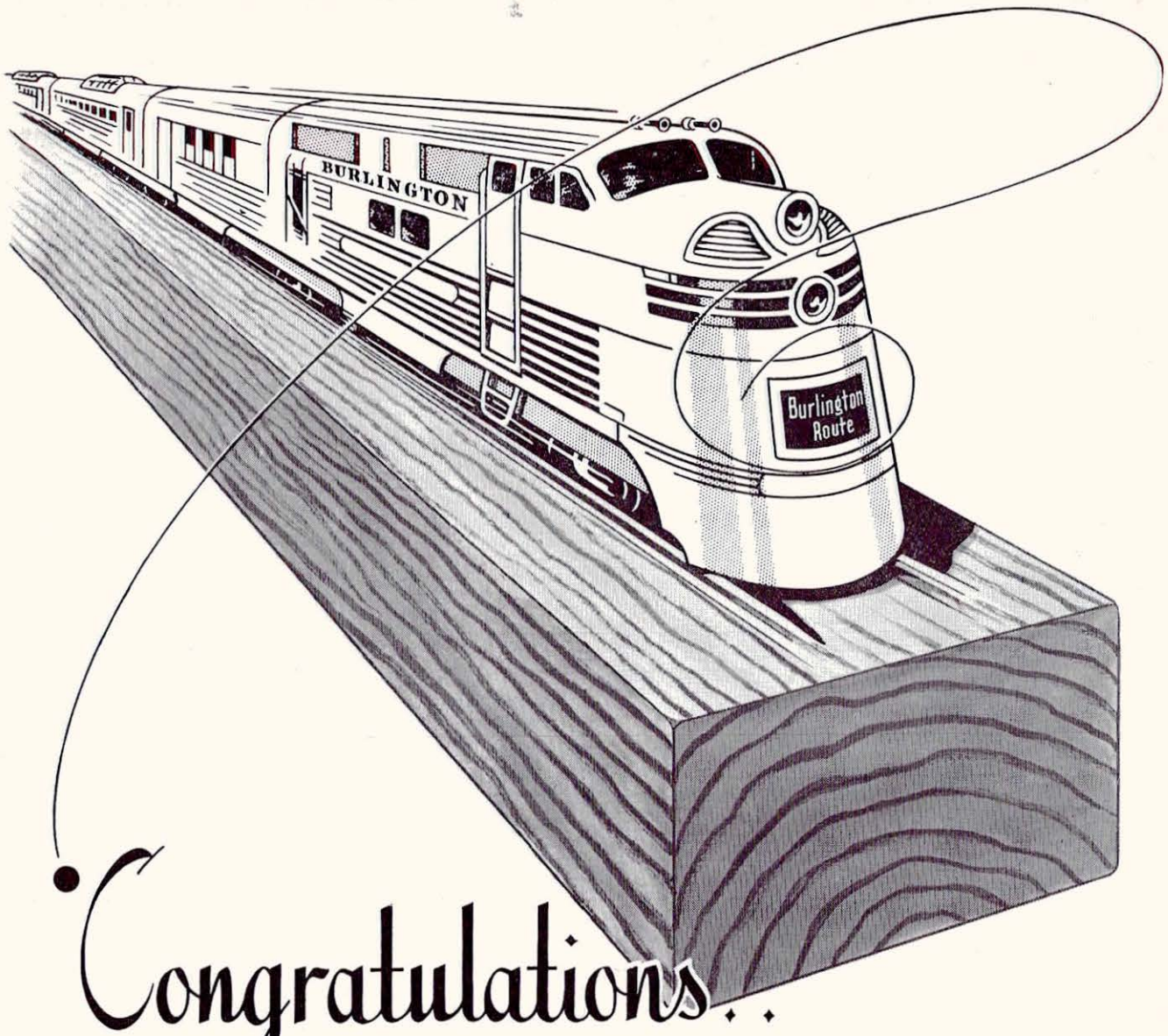
To help build the Cars of Tomorrow, Youngstown offers Yoloy, a high-strength, low-alloy nickel-copper steel, used in rail transportation service for more than 12 years. It affords three important advantages:

1. Because of its extreme toughness and strength, Yoloy can be used in thinner sheets and lighter structural members than usual, without loss of over-all strength. These important physical properties of high-strength Yoloy contribute directly to the advantages of lighter weight construction and elimination of cost increase due to dead weight.
2. Yoloy, due to its nickel-copper content, has unusual ability to resist corrosion. This characteristic contributes to lower maintenance and longer useful life, as well as to increased safety and better appearance.
3. Yoloy forms easily and welds readily. Its ability to resist both shock and abrasion is high. These properties mean lower construction costs and less maintenance expense--factors to be considered in this era of high and still rising costs.

Yoloy is available in the form of plates, sheets, strip, shapes, hot and cold finished bars, seamless and electric weld pipe.

QUALITY V YOUNGSTOWN SERVICE

YOUNGSTOWN
THE YOUNGSTOWN SHEET AND TUBE COMPANY
GENERAL OFFICES - YOUNGSTOWN 1, OHIO
Export Offices - 500 Fifth Avenue, New York City
Manufacturers of
CARBON - ALLOY AND YOLOY STEELS
Sheets - Plates - Pipe and Tubular Products - Bars - Rods - Wire - Cold Finished Carbon and Alloy Bars - Tie Plates and Spikes - Conduit - Electrolytic Tin Plate - Coke Tin Plate.



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TILLER TIE & LUMBER
COMPANY

Union Life Building • Little Rock, Ark.

CHAMPION MICRO-MATIC HAND BRAKE

MICROMETER CONTROL OF BRAKING POWER.

AUTOMATIC HOLDING OF BRAKING POWER.

Scientific Design Creates NEW STANDARDS of SAFETY
CHAMPION MICRO-MATIC HAND BRAKE!

- Perfect control of car.
- Maximum braking power.
- Positive automatic holding.
- No levers to operate.
- Controlled by hand wheel only.
- Fast take-up. 2½ turns of hand wheel.
- Quick, fully-controlled release.
- No danger of damage to air equipment.
- Perfect grip hand wheel.
- Sealed-in Lubrication, and "Oil-lite" bearings.
- Tight fit bearings—vibration wear practically eliminated.
- Cover removable for inspection.

A.A.R. APPROVED AND CERTIFIED — CERTIFICATE NO. 2

THE **ORME** CO.
CHAMPION BRAKE DIVISION
RAILWAY EXCHANGE BUILDING
CHICAGO

Congratulations, BURLINGTON, on a CENTURY of SERVICE to the WEST

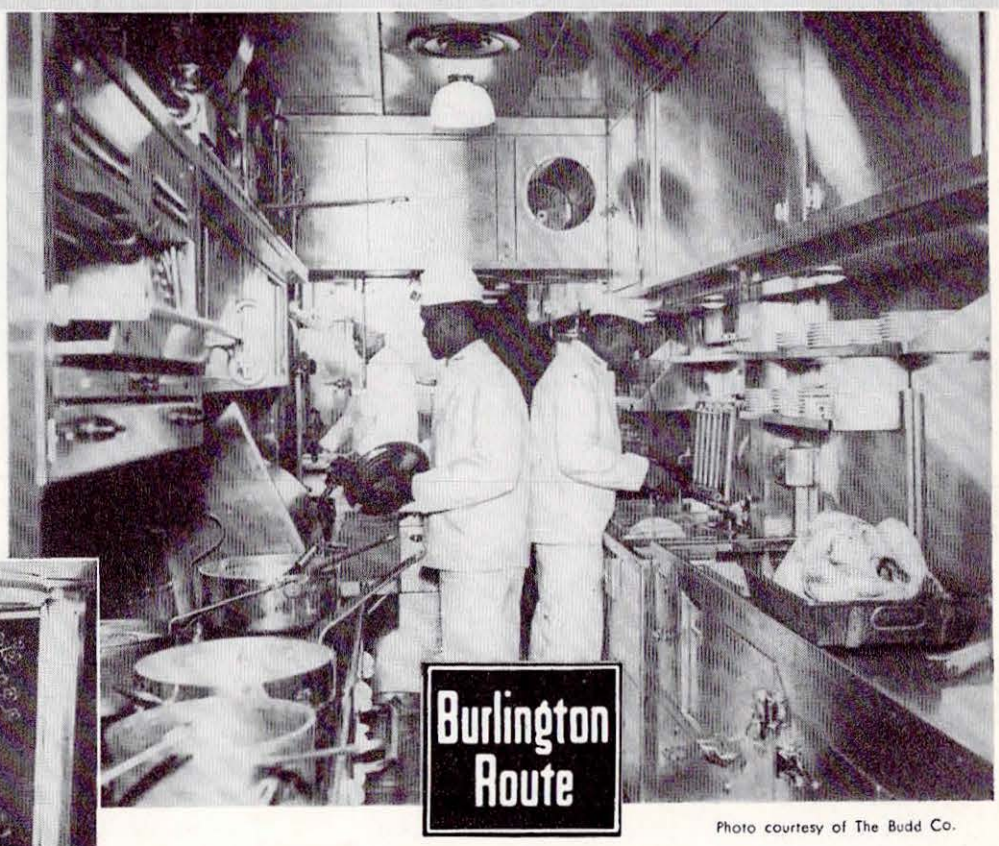
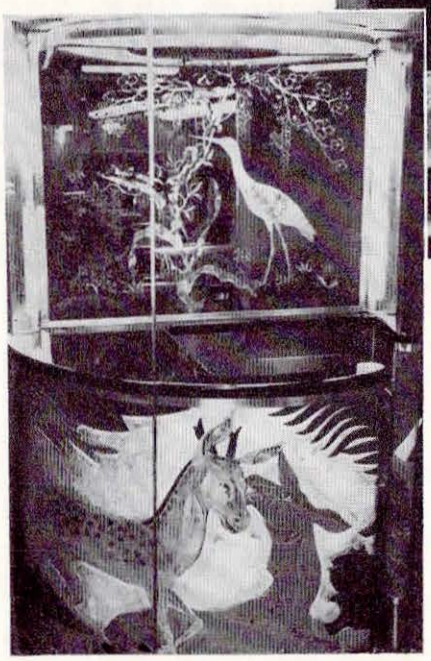


Photo courtesy of The Budd Co.



– – – ANOTHER FIRST – – –

The Steward's Desk out front in the Dining Room for better supervision of service to the patrons.

Just as the C. B. & Q. was the first in adopting Streamlined Stainless Steel Cars in their modernization program, we were first in pioneering in the use of the all Stainless Steel Kitchen for Dining Car Service. The above photograph is representative of the result of the growth and development of our efforts in this field, working along with the Railroads in meeting their exacting specifications for good, efficient service. We are proud of our continued participation in supplying the C. B. & Q.'s needs from the first Zephyr to their latest fleet of Dining Cars.

ANGELO COLONNA
PHILADELPHIA, PA.

Yoloy IS HERE TODAY »

for the Cars of tomorrow

To help build the Cars of Tomorrow, Youngstown offers Yoloy, a high-strength, low-alloy nickel-copper steel, used in rail transportation service for more than 12 years. It affords three important advantages:

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Yoloy is available in the form of plates, sheets, strip, shapes, hot and cold finished bars, seamless and electric weld pipe.

QUALITY V YOUNGSTOWN SERVICE

YOUNGSTOWN

THE YOUNGSTOWN SHEET AND TUBE COMPANY

GENERAL OFFICES - YOUNGSTOWN 1, OHIO

Export Offices - 500 Fifth Avenue, New York City

Manufacturers of

CARBON - ALLOY AND YOLOY STEELS

Sheets - Plates - Pipe and Tubular Products - Bars - Rods - Wire - Cold Finished Carbon and Alloy Bars - Tie Plates and Spikes - Conduit - Electrolytic Tin Plate - Coke Tin Plate.

Is every-BODY happy?

SALLY FORTH

TILLY TUBB

MORT TICIAN

MYRTLE GYRDLE

HORACE HALLTREE

CHUCK WAGON

BESS BETT

They Are In BURLINGTON CARS Equipped with

KARPEN

COMFORT-DIMENSION SEATING

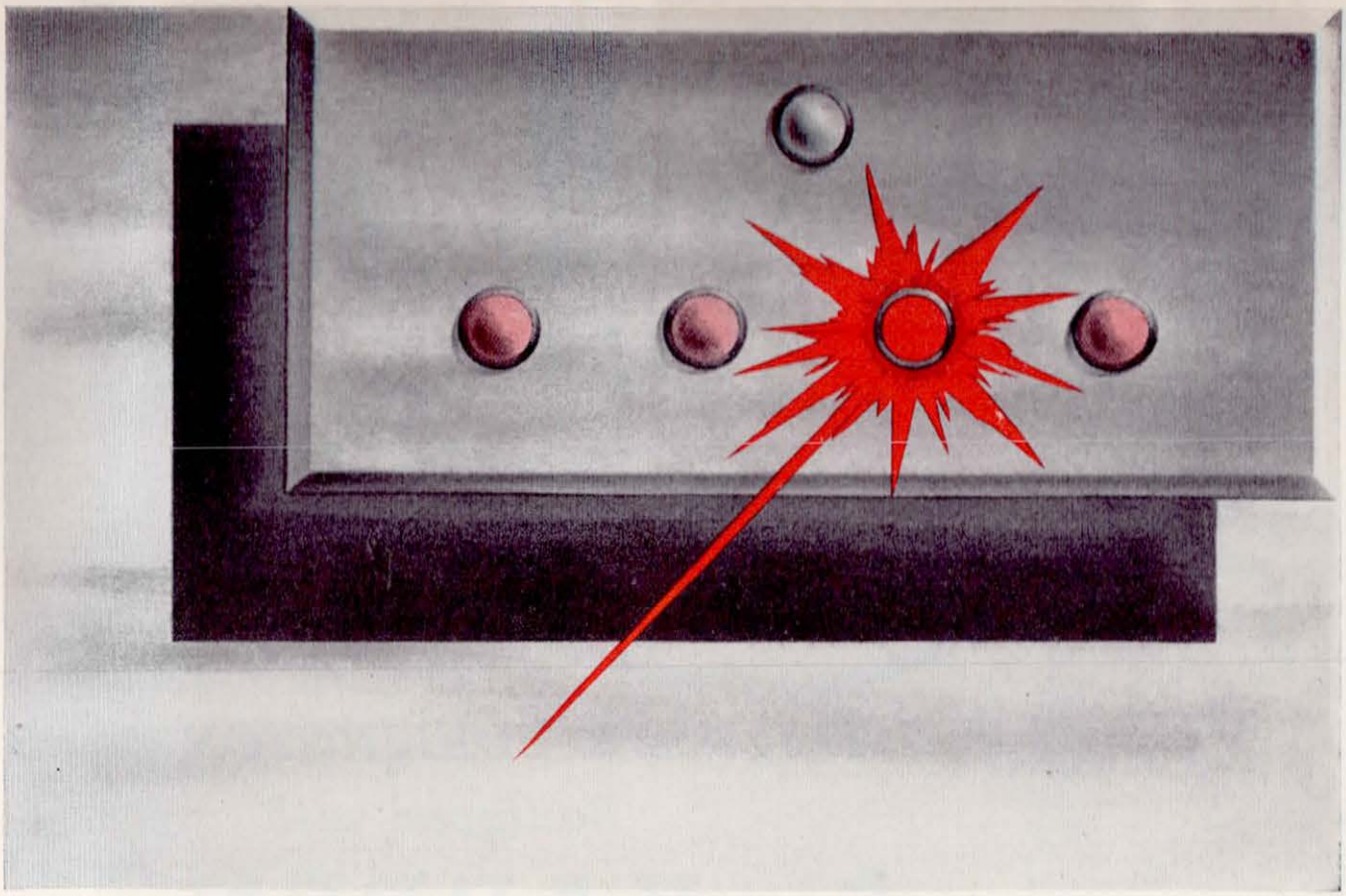
Engineered for Every *Body's* comfort —Karpen seating has been designed so that seats, backs and arm rests give a more relaxing, more pleasant trip. Consider the sizes and shapes of the people who ride your vehicles — there are no two alike — and that's the reason transportation management looks to Karpen engineering for Comfort-Dimension seating!

4081—5

S. KARPEN & BROS. TRANSPORTATION SEATING
624 S. MICHIGAN AVE., CHICAGO · ONE PARK AVE., N.Y.

George B. Cross Company EXCLUSIVE SALES AGENTS

KARPEN SEATING . . . POINT OF CONTACT BETWEEN THE RAILROAD AND ITS PASSENGERS



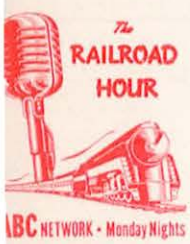
this new device keeps an *Electric Eye* on the bearings

The Westinghouse-Union Hot Bearing Detector brings an important new safeguard to passenger equipment. It solves the problem of hot bearing detection.

Any undue rise in the temperature of an individual bearing is immediately detected and reported—by red light to the train crew, by signal whistle to the engineer—BEFORE any damage results.

The device disregards temperature fluctuations due to weather and operating conditions; only the abnormal, threatening rise causes it to react.

Leaflet No. 2464 gives the complete story of principle and operation. We will be glad to send you a copy.



Westinghouse Air Brake Co.

WILMERDING, PA.

P-4408

Vol. 126, No. 6 February 5, 1949

RAILWAY AGE

With which are incorporated the Railway Review, the Railway Gazette, and the Railway-Age Gazette. Name Registered in U. S. Patent Office.

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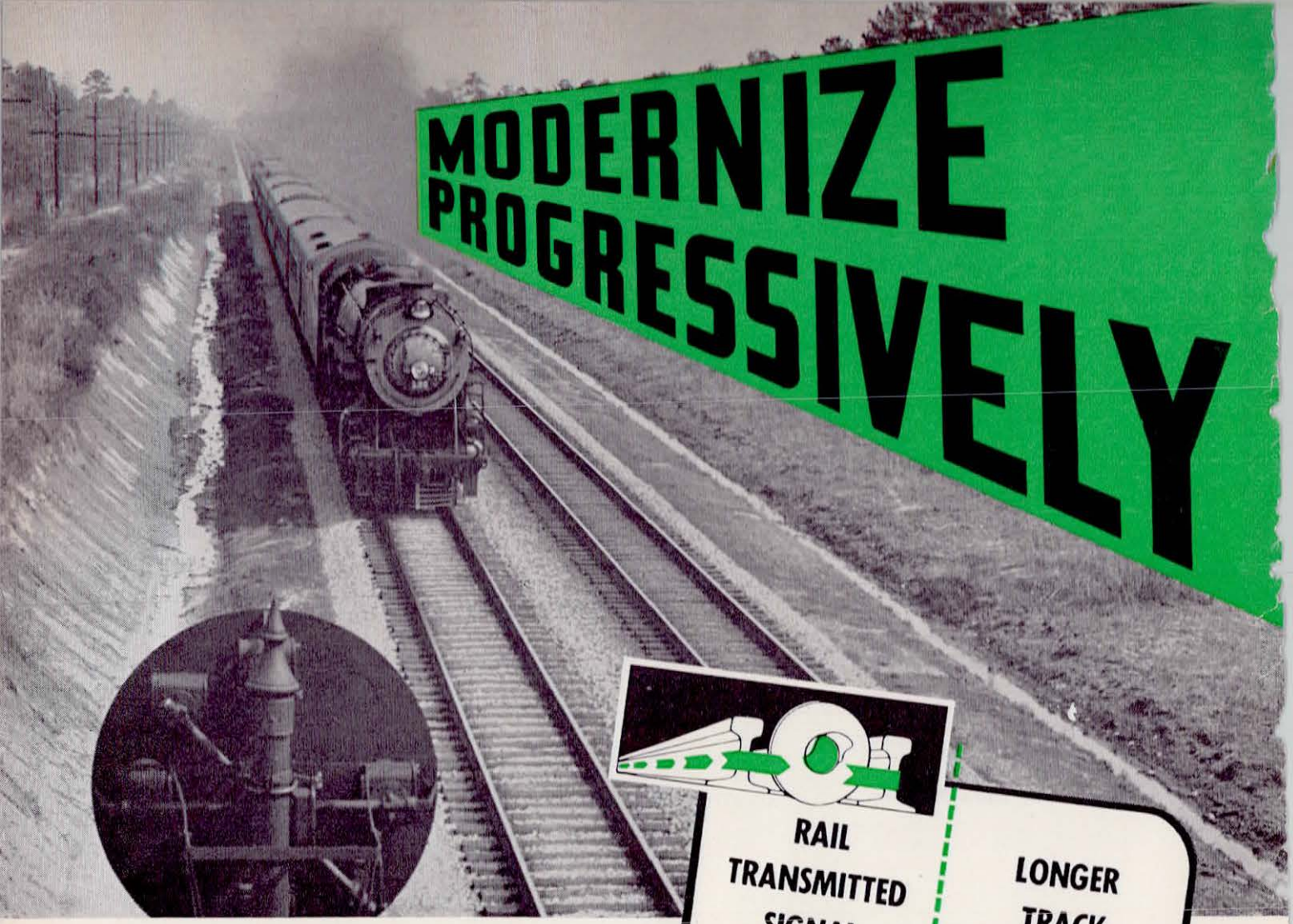


MODERNIZE PROGRESSIVELY

RAIL TRANSMITTED SIGNAL CONTROLS

LONGER TRACK CIRCUITS

BETTER SHUNTING SENSITIVITY

INCREASED SAFETY OF TRAIN OPERATION

WITH "UNION" Coded Track Circuit Control

Because of its unsurpassed flexibility of application, you can install "Union" Coded Track Circuit Control progressively. At first, installations can be made only at locations where modernization is needed most urgently. Subsequent installations . . . new signaling or re-signaling . . . can be added as required until the entire project is completed.

Remember, too . . . where Coded Track Circuit Control of wayside signals is used, the wayside costs of adding cab signal protection later may be greatly reduced or entirely eliminated. Write for Bulletin No. 157.

UNION SWITCH & SIGNAL COMPANY

SWISSVALE PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

WEEK AT A GLANCE

100 YEARS FOR THE "Q": One week from today—February 12—marks the hundredth birthday of one of the world's truly great railroads—the Chicago, Burlington & Quincy. *Railway Age* is proud to mark the occasion—and to salute the "Q"—with two illustrated feature articles. One, beginning on page 80, is a brief review of the system's century-long history; the other, at page 85, is a discussion of the art and science of railroading as practised by several generations of the able men who have contributed to the Burlington's enviable record of operating efficiency, technical progress and financial stability. Details of the road's birthday celebration at Aurora, Ill., next Saturday are included in our News columns.

RALPH BUDD: Just as the Burlington itself is generally recognized as one of the country's outstanding railroads, so is its president, Ralph Budd, generally recognized as one of the country's outstanding railroad executives. Mr. Budd, his career and his accomplishments, are the subjects of one of this week's editorials.

NOT RESTING ON ITS LAURELS: The Burlington has no intention of resting on its well-earned laurels, but plans to open its second century of service with the same progressive spirit that marked its first. That, at least, is the inference to be plainly drawn from its proposal, reported in this week's Construction news columns, to speed up its Chicago-Kansas City services by building a brand-new 45-mile railroad in Missouri.

SMOKE, BUT NO FIRE: The latest hearings, at Miami, in the Interstate Commerce Commission's investigation of space reservation practices, closely followed the pattern of earlier hearings at Chicago and New York. They produced some smoke, but practically no fire, and indicated that the alleged "black market," if it ever existed, is rapidly disappearing.

"OPERATION RAT HOLE": Spending large sums of money to repair old freight cars is "operation rat hole," according to John I. Snyder, Jr., chairman and president of the Pressed Steel Car Company. Mr. Snyder's views, expressed in a recent speech at New York, are summarized in our News columns, where they deserve careful reading by executives and mechanical officers.

HOW TO DESTROY SMALL BUSINESS: Most small business enterprises have to depend for transportation on *common* carriers; their traffic volume is seldom large enough to enable them to obtain favorable rates from contract carriers or to justify them in using private transportation on socialized highways or waterways. It is therefore all the more surprising that a Congressional committee concerned with problems of small business should make recommendations which would further divert traffic from common to contract or private carriers. For discussion of this topic, see this week's leading editorial.

EUROPEAN ROADS COMING BACK: The railroads of Western Europe are still operating under many handicaps, but their situation is by no means discouraging. Such was the conclusion reached by William White, president of the Delaware, Lackawanna & Western, following his inspection of the roads as consultant for the Economic Cooperation Administration. His findings, summarized from an account prepared for the New York Railroad Club, appear on page 98.

ANOTHER NEW DIESEL SHOP: With use of Diesel motive power showing a steady increase, facilities for its efficient and economical servicing and repair are becoming correspondingly important. Several new shops, especially designed for such purposes, have been described in some of our recent issues, and this week we describe another—just opened at Chicago by the Chicago & North Western. Page 100.

REASONABLE PROFITS ESSENTIAL: "Reasonable railroad profits are essential," not only to railroad workers, shippers and investors, but to the whole system of free private enterprise. So said William T. Faricy, president of the Association of American Railroads, in a speech at Los Angeles on February 3, reported in this week's News.

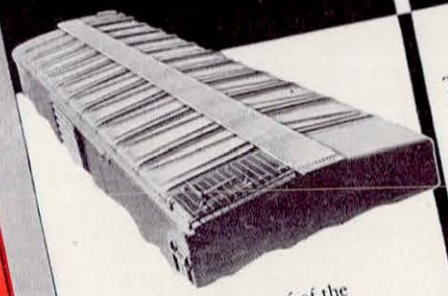
DIESELS FOR COMMUTERS: As one step toward complete rehabilitation of its Chicago commuter service, the Chicago, Rock Island & Pacific has recently put in service two 1,500-hp. Fairbanks-Morse Diesel locomotives modified for suburban use. The locomotives and their schedules—about 2,000 mi. per unit per week—are described in an illustrated article beginning on page 94.

TRAVELLING PRESIDENT: Charles J. Graham, president of the Pittsburgh & West Virginia, is a believer in "personal trade promotion." To practice what he preaches, Mr. Graham is endeavoring to meet personally nearly every one of his road's carload shippers. The reasons for his unusual undertaking, his technique in carrying it out, and the results so far accomplished are detailed in an article beginning on page 106.

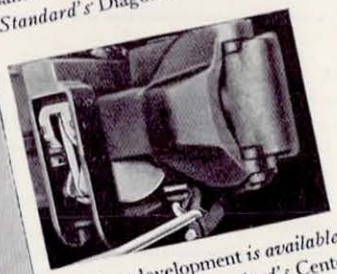
NEW OFFICERS FOR A. S. F.: Thomas Drever, president of American Steel Foundries for the past 10 years, has been elected chairman of the board, and is succeeded as president by C. C. Jarchow. These and other changes in the company's top personnel are reported on page 110.

No other freight or gondola car end of the same weight is as strong as *Standard's* Improved Dreadnaught End.

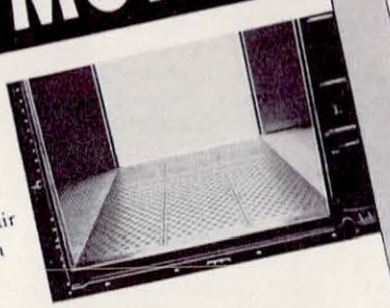
Here's why "Standard" sells MORE



No other freight car roof of the same weight is as strong as *Standard's* Diagonal Panel Roof.



No other development *is available* to do the job of *Standard's* Centering Device with Coupler Height Adjustment.



There is no single freight car specialty more valuable for eliminating repair shopping time than *Standard's* Metal Floor Protector.

STANDARD RAILWAY EQUIPMENT MANUFACTURING COMPANY

310 SOUTH MICHIGAN AVENUE • CHICAGO 4
247 PARK AVENUE • NEW YORK 17

The World's Largest Fabricator of Railway Car Specialties

The products themselves answer the question in the headline. Read the captions, and the reason is obvious! It's true of all "*Standard*" products, not just the four pictured.

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HOW TO DESTROY SMALL BUSINESS

Nothing that has happened in the past two decades—not even excessive taxation of earnings—has been more injurious to the cause of small business than the growth of private and contract transportation, with a corresponding decline in the percentage of total traffic remaining to be moved by common carriers. The only common carriers, of course, in the full sense of the term—i.e., willingness and readiness to move all kinds of traffic (and not merely the convenient and lucrative traffic) at all times and for all destinations—are the railroads. To the degree that the common carriers lose traffic to private and contract haulers, their overhead costs have to be spread over a smaller volume of remaining traffic, and unit costs of common carrier service increase. No development could possibly be more adverse than this to the welfare of small business—which of course, is not able, as big business is, to provide its own transportation facilities and cannot proffer a tempting volume of traffic to contract carriers to induce them to offer the favorable rates they provide for large shippers.

Ruinous to Common Carriers

In these circumstances, it might have been expected that the Select House Committee to Conduct a Study of the Problems of Small Business in the recent Congress would have had some recommendations to offer to bolster and strengthen the common carriers. Instead, the committee did just exactly the opposite—it recommended that common carriers be forbidden "to grant preferential commodity rates to any shipper or shippers." Such commodity rates are practically the only device remaining to the common carriers, as regulatory law and practice now stands, enabling them to hold on to the traffic of large shippers—preventing really wholesale diversion of bulk traffic to the barges and trucks. Adoption of the recommendation of the House committee would be ruinous to the common carriers and to practically all business not able to do its own hauling or to induce contractors to handle it.

There might be practical sense, from the standpoint of the welfare of small business, in the prohibition of commodity rates, if *the railroads had a monopoly of intercity transport,* which, of course, they do not. The effect of such a rate structure as the House committee favors would, theoretically, under conditions of complete transportation monopoly, make it impossible for large corporations to obtain lower unit transportation costs than their smaller and weaker competitors. But the effect on the railroads of such a rate structure now could only be to drive the large corporations to private or contract carriage to a degree even beyond that now obtaining. It is difficult to imagine how this inevitable result could possibly bring other than irreparable injury to the majority of shippers.

In the interest of realism, the House committee on small business (just reconstituted in the new

Congress) should not only reverse the recommendation of its predecessor, but should lend active weight in the opposite direction—i.e., recommend that common carriers be accorded *much greater* freedom than they now possess to make rates which will encourage shippers of all kinds to stick with them, and come back to them.

Benefits of Flexibility

Such flexibility would benefit small shippers by checking and probably reversing the present disastrous trend of traffic away from common carriers to private or (virtually the same thing) contract movement. Even if commodity rates are lower than class rates, so long as they contribute substantially to net earnings, they permit the railroads to provide class rates at a much lower level than would be possible if a large part of the traffic now moving at commodity rates were to desert the rails for the highways and the rivers.

Secondly, greater flexibility in rate regulation could bring direct benefit to smaller shippers by permitting common carriers to accord rate concessions to customers who are, in relation to their total shipping requirements, "good" customers. Thus, a small business which ships by rail all of its intercity traffic susceptible to rail movement could—and, in the opinion of this paper, should—be given a more favorable overall rate than another business which uses the railroad largely as a "stand-by" facility, to handle its unattractive tonnage and as a convenience in emergencies.

Thus far, the Interstate Commerce Commission has not looked kindly upon expansion of rate concessions beyond the distinction between carload and l.c.l. lots and between commodity and class rates. It has authorized a few trainload rates to enable a railroad to anticipate, and thereby prevent, a threatened excursion into private water carriage. But beyond this, it has denied in hundreds of cases efforts by the carriers to introduce lower rates to particular shippers to meet specific competitive situations. It has ruled that the same concessions must be granted to all, including those who have done nothing to deserve them—a condition, of course, which absolutely destroys their value.

Small Business Defenseless

There is some doubt whether the commission is right in its apparent belief that, under the present Interstate Commerce Act, it cannot go a great deal further than it has done in allowing "concession" rates. Whatever the facts, the interest of small business—if dramatized and capably channeled—has sufficient political strength to furnish the votes required to persuade legislators to rewrite the law.

As things now stand, small businesses are defenseless against the economies in transportation expenses reaped by their large competitors who are better able than the "little fellows" to use tax-supported transportation facilities for private carriage. The abolition of even the few slight elements of flexibility still remaining in the rate structure, as threatened by the House committee, would serve only to add to the disadvantages with which small businesses are now afflicted. There is only one condition under which the proposal of the House committe—that commodity rates be forbidden—would actually accomplish its objective of helping small business, and that condition would be that private and contract transportation be prohibited where common carrier service is available. Unless small business interests are willing to do battle for that prescription, they had better go slow in proposing additional limitations on the common carriers.

BUDD OF THE BURLINGTON

Ralph Waldo Emerson once said that "An institution is the lengthened shadow of one man." The Chicago, Burlington & Quincy Railroad, which will celebrate its centennial on February 12, and to which for this reason a good deal of special attention is given in this issue of *Railway Age*, is and has been for many years one of the great institutions of the United States. It is such a great institution because it is the lengthened shadow of four of the greatest railroad men of all time—John M. Forbes, Charles Perkins, James J. Hill and Ralph Budd.

Mr. Forbes and Mr. Hill dominated the Burlington during two widely separated, very different, and vitally important periods—Forbes during the period of pioneering, and Hill just when *intensive* development had become more important than *extensive* development.

The Burlington competes with other railway systems throughout a territory in which almost every railway excepting the Burlington has become bankrupt once or oftener. But for 100 years the Burlington always has been solvent. In fact, it has been so decidedly solvent that for forty years, beginning in 1910, with the first proceding of the railways before the Interstate Commerce Commission for a general advance in freight rates, the Burlington's large net earnings have been an embarrassment to most of its competitors because used as an argument to show that rates in western trunk line territory would be high enough or even too high if all the railways were as efficiently managed as the Burlington.

A century of unbroken success in making unusually large net earnings while meeting every form

of competition is surely proof of the use for a century of great wisdom and skill in both the extensive and intensive development of a property and in its administration and operation. The problems that Ralph Budd has had to solve on the Burlington have been, of course, widely different from those which confronted Messrs. Forbes, Perkins and Hill. Mr. Budd became president of the Burlington in 1932 after having been president of the Great Northern since 1919. His career of almost thirty consecutive years as chief executive of large railroads is one of the longest such careers in history. When he became president of the Burlington at the bottom of the Great Depression most of its railway competitors were in bankruptcy or well on the way to it; and the Burlington, like all roads in its territory, was suffering severely from losses of traffic due not only to depression but to the unregulated and heavily subsidized competition of carriers by inland waterway and highway.

While the railways were still suffering the full effects of the depression and of subsidized cutthroat competition from other carriers, they found themselves suddenly plunged into the greatest war in all history, under the pressure of the demands of which they within four years (1940 to 1944) doubled their service in carrying freight and quadrupled their service in carrying passengers. Ralph Budd, after he had piloted the Burlington unscathed through the depression, found himself called upon to contribute more than any other railway executive to this triumphant solution of the wartime transportation problems of the nation. He was drafted by President Roosevelt to serve in 1940-1942 as head of all the nation's carriers in the capacity of transportation commissioner of the Advisory Commission of National Defense. In this position he took the lead in effecting the improvements in operation and the increase in cooperation between the railways themselves and between the railways and the shippers, including government, the largest shipper, which largely made possible the subsequent very successful work of Joseph B. Eastman and Col. J. Monroe Johnson as directors of defense transportation.

Mr. Budd was educated as an engineer and had a distinguished career as such; and his engineering education and experience have been of great value to him as a railway executive; but his chief claim to fame is that he has been one of the most accomplished, progressive and courageous administrators and business statesmen who have ever devoted their talents to railroading. The Burlington had long been a great railroad system when he became president of it, but the Burlington of 1949 mainly owes its position in the worlds of transportation and of business to its management during 17 years of depression, war and postwar difficulties by Mr. Budd. It is today principally the "lengthened shadow" of Ralph Budd.

SHADES OF CASEY JONES!

There's no use talking to the man behind the throttle about the pros and cons of Diesel and steam motive power. Such minutiae as availability, maintenance costs, fuel supply and balanced rotating versus reciprocating forces can't be of possible interest to "eagle eye" now that an electric water cooler can be added to his comforts in the Diesel's cab. Who would want to swap spring water at 50 deg. F. for that stuff that gushes from the spout of the familiar water can? Add that to a white-collar atmosphere, picture windows with windshield wipers and a rocking-chair ride and the sales resistance of that plutocrat of the cab must be almost zero. If he makes the choice the Diesels are surely here to stay.

SHORT LINE TRAFFIC PROMOTION

Planned effort to increase traffic through industrial or agricultural development of the territory served has long been an accepted function of most Class I railroads. But so far as available records indicate, there has been little or no such effort on the part of independently operated short lines.

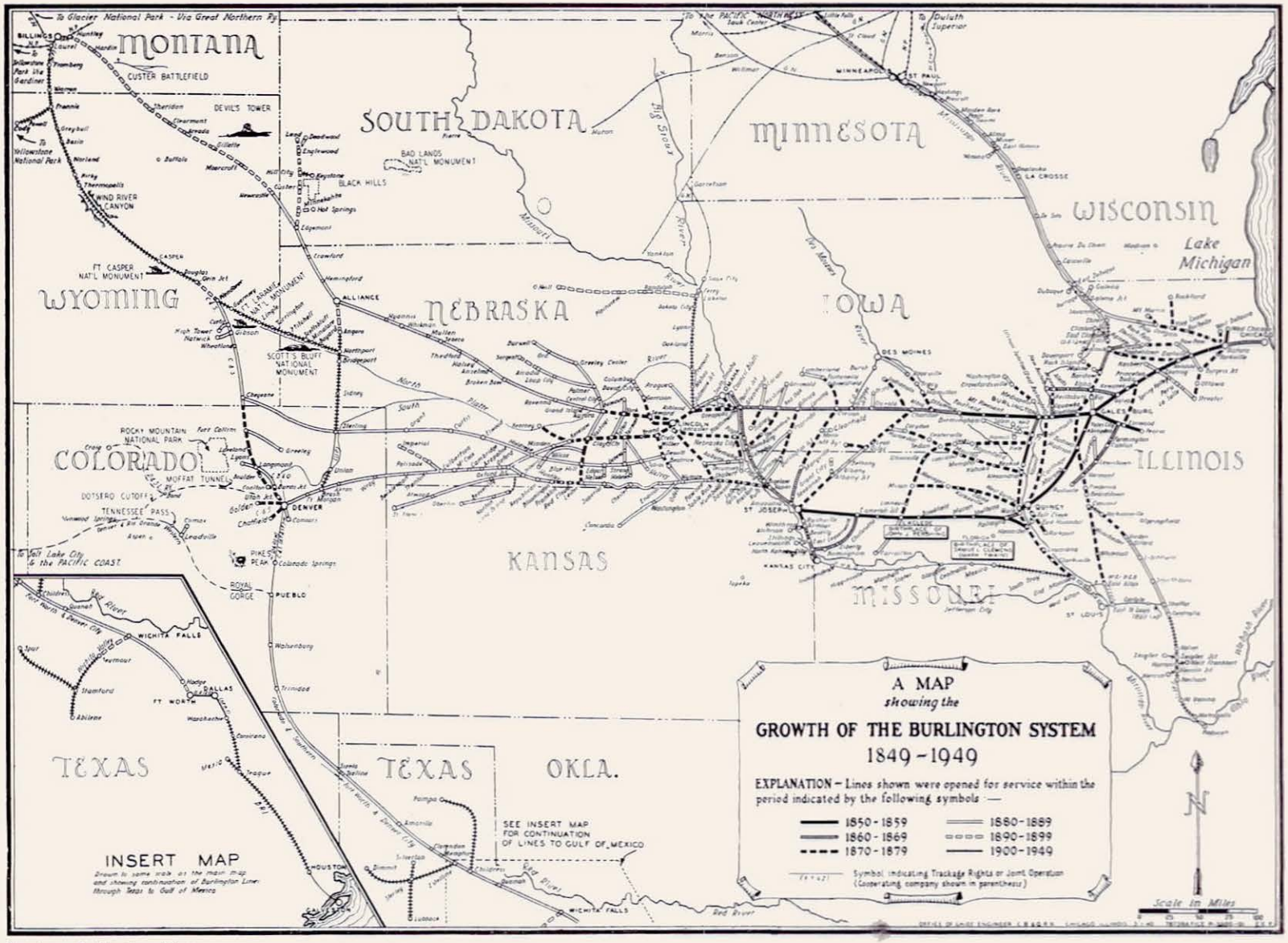
As shown by an article in our January 1 issue, however, at least one short line—the Chesapeake Western—is making a determined effort to increase and balance its own traffic by promoting the industrial development of the South Shenandoah valley which it serves. The C. W.'s energetic president, D. W. Thomas, frankly admits that the effort is something of a gamble; it may or may not produce tangible results, but its cost is small compared to the possible rewards of even moderate success.

Not all short lines, of course, operate in territory having the many advantages of location, climate, labor supply, resources and pleasant living conditions which the Chesapeake Western claims for Virginia's Augusta and Rockingham counties. But nearly all of them can, with possible ultimate profit to themselves, offer some inducements to new businesses, or to those seeking branch plant sites.

In an industry as fiercely competitive as transportation is today, no railroad, short or long, can afford merely to hope that traffic will come to it. And with the current interest in decentralization of industry, short lines have a unique opportunity to develop both themselves and their communities.

They should be able, in such an effort, to enlist the aid of the development departments of their line-haul connections. Those departments, in turn, might find it advantageous to work closely with tributary short lines, to the advantage of both.

THE BURLINGTON'S FIRST CENTURY



Courtesy Burlington Lines

Map of the Burlington Lines indicates the decade in which each segment was placed in service

GOOD READING IN BURLINGTON HISTORY

Railway Age presents this brief historical sketch of the 100-year-old Chicago, Burlington & Quincy Railroad (or Burlington Lines) as an appetizer. It is highly selective and does not pretend to completeness—even in summary.

To celebrate its centennial the road is issuing this year, for free distribution, a 64-page illustrated booklet titled "Milepost 100," containing a skillfully wrought account of the line's history, plus an admirably condensed description of the modern 11,000-mi. system. Its author, Dr. Richard C. Overton, of Northwestern University's School of Commerce, has in preparation a longer history of the Burlington Lines which will be published as a private venture. Dr. Overton, it will be recalled, wrote the monumental history of the road's colonization work in Nebraska and Iowa in "Burlington's West," published by Harvard University Press in 1941. Later this spring, Little, Brown & Co. will publish a pictorial social history of the road and its territory by Lloyd Lewis, writer and newspaperman, and Stanley Pargellis, chief of Chicago's Newberry Library.

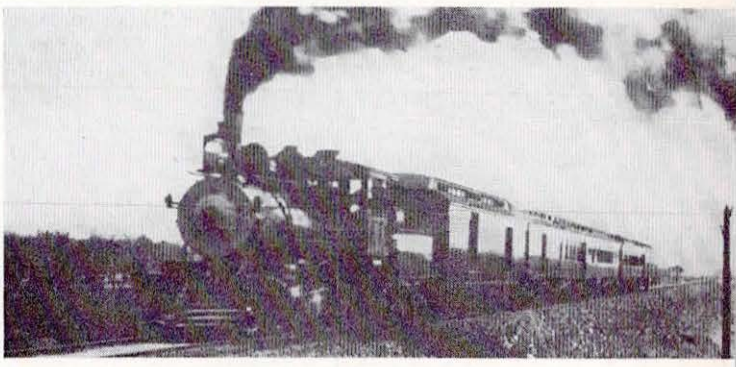
The 11,000-mile Burlington Lines (8,867 mi. constituting the Chicago, Burlington & Quincy, the remainder comprising the Colorado & Southern and subsidiaries), serving 14 states in the Central West, fourth longest railroad in the country, becomes 100 years old on February 12. This modern railroad, which, in 1947 handled 1.8 per cent of the passengers and 2.3 per cent of the tons of freight carried by all Class I roads, has long been an outstanding property in several important respects—technical improvements, operating efficiency, traffic aggressiveness, and prudence in fiscal matters.

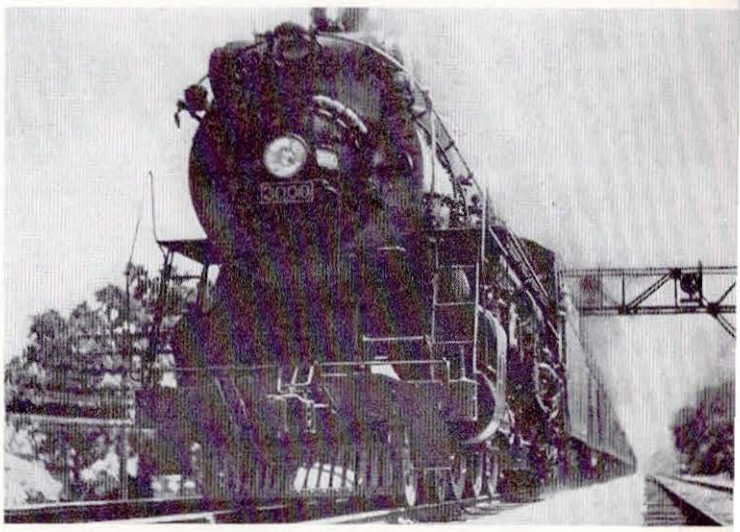
The Burlington has always been considered by investors a "solid" concern and traditionally has followed the investment policies of a group of Bostonians headed by John Murray Forbes, who, prior to James J. Hill's purchase of control in 1901, were primarily concerned with the road's upbuilding. This infusion of eastern capital made possible a quick expansion and intensification of trackage, while, at the same time, it brought none of the evils of absentee ownership, for such "spark-plugs" of the group as James F. Joy, John W. Brooks and Charles E. Perkins lived and worked "on line" in the West.

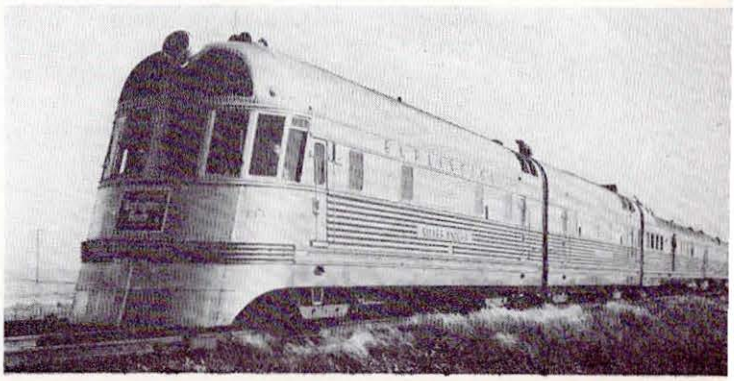
Since 1901 the C. B. & Q. has been the joint property of the Great Northern and the Northern Pacific, control being exercised through ownership of 48.55 per cent of outstanding capital stock by each. Thus it is a so-called "Hill road," and its history since the turn of the century has been much influenced by that fact—of which more is contained in the article which follows this. But it is a distinct corporation, the independence of which is jealously guarded by its competing owners.

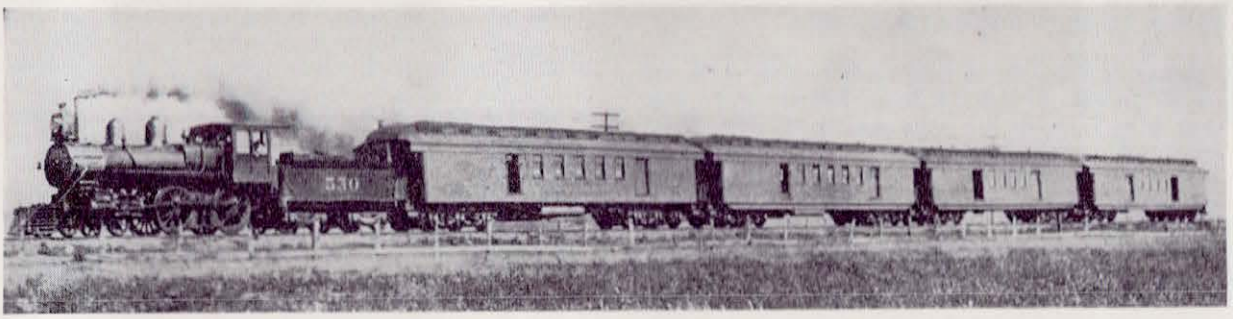
The Burlington was born in an atmosphere of high hopes in the milling town of Aurora, Ill., whose inhabitants were tired of fighting clayey common roads over the 38 miles to Chicago. Building of the Galena & Chicago Union out of Chicago to the north in 1848 gave them opportunity for railroad access within their slender financial means. On February 12, 1849, Illinois' governor approved a charter authorizing the Aurora Branch railroad to build 12 miles northward from Aurora to a junction with the Galena at a point now called West Chicago. By August 27, 1850, six miles of the line had been completed from the junction to Batavia. Through train service between Batavia and Chicago was introduced six days later, using trackage rights over the Galena east of the junction, and operated by the "Pioneer," Chicago's first locomotive, and a single coach, both borrowed from the G. & C. U.

EVOLUTION OF C.B.&Q. NUMBER ONE—The Chicago to Denver train of the Burlington has carried Number 1 since 1882. At the top is the first Number One as it was arriving in Denver. The middle illustration shows "The Aristocrat" shortly after its inauguration in 1926. At the bottom is the 11-yr.-old "Denver Zephyr"—today's Number One









Inaugurated in May, 1884, to win the contract for carrying transcontinental mail between Chicago and Council Bluffs, Iowa, the Burlington's "Fast Mail" won the competition and has been running ever since, and the "Q" has continued to be the leading carrier of transcontinental mail on that stretch. The famous train is here shown as it appeared in the late Nineties

Thus began the operation of the Burlington Lines, the second railroad to serve Chicago.

Early in October of the same year the line was completed to Aurora, and, on October 21, the company inaugurated regular service to and from Chicago over its entire line and the Galena road with its first two owned locomotives. Despite normal quota of growing pains, the little road was reasonably successful from the start, a phenomenon in the then sparsely-settled Mid-West.

But it was the age of expansion, and the business that did not grow was gobbled up. Railroad promotion schemes on every hand threatened in some instances to bottle up and strangle the little road and, in others, promised to afford by consolidation a convenient means of westward expansion. In the latter category was an enterprise titled the Central Military Tract Railroad, chartered February 15, 1851, by which the citizens of Galesburg hoped to effect a connection to the northwest with the Rock Island & La Salle (now part of main line of the Chicago, Rock Island & Pacific). Backed also by Galesburg business men was the Peoria & Oquawka, which, though chartered on February 12, 1849, "inherited" its conception and five miles of graded route from a state-sponsored project originated by the Internal Improvement Act of 1837. Galesburg was also the goal of "a lateral branch" of the Northern Cross, another state-owned project of 1837 absorbed later by private interests, running northeast from Quincy.

Union and the C.B. & Q.

Early in 1852 fate ushered in the means by which these weak and incomplete projects, fanning out from Galesburg, joined with the Aurora Branch to form the C. B. & Q.* In one of his unpublished monographs on early Burlington corporate history, A. W. Newton, consulting engineer, relates how a representative of the Aurora Branch, an officer of the Central Military Tract, and a lawyer interested in the projected Peoria & Oquawka — acting independently — converged on Boston at one time seeking from capitalists there the funds they needed to complete or expand their plans. They interested wealthy, high-minded John Murray Forbes in their properties as a means of building a source of traffic west of Chicago for the Michigan Central (now part of New York Central), which he had just completed into Chicago. The M.C.'s bitter rival, the Michigan Southern (also later N.Y.C.), had gained control of the Rock Island and was already building toward the Mississippi.

The welding of a fit rival for the Rock Island by joining the three Galesburg roads was undertaken at once by western associates of Forbes, and by June, 1852, their charters had been so amended as to permit them to change or extend their routes so as to form a continuous road from Chicago, through Galesburg, to the Mississippi river. At the same time the Aurora Branch changed its name to Chicago & Aurora, and the Military Tract road abandoned the idea of serving as a feeder for the Rock Island. An intensive drive for funds—both from local interests and "back East"—furnished the fuel for rapid building and joining of the constituent units. C. & A. completed its "extension" from Aurora to Mendota in October, 1853, while the C. M. T. joined Mendota with Galesburg by December, 1854. On March 17, 1855, the P. & O. was opened for traffic between Galesburg and East Burlington (which was substituted as a more promising objective than Oquawka), and a continuous railroad line from Chicago to the Mississippi was ready for business. Together with the Quincy & Chicago which, as successor to the Northern Cross branch, completed its line to Galesburg in January, 1856, these Forbes properties constituted a "Chicago, Burlington & Quincy railroad" indeed, although that title was applied at first only to the C. & A. Between 1856 and 1864, these legally separate segments were, one by one, absorbed into the C. B. & Q.

Irked by the inconvenience of using the Galena between West Chicago and Chicago, the Burlington opened a new 38-mi. direct line between Aurora and Chicago on May 20, 1864, and reduced its original segment to minor branch-line status.

The first report of the combined C. B. & Q., in June, 1864, covered a 400-mi. system, with a physical plant at the highest standards of the day and equipment comprising 98 locomotives, 60 passenger-train cars, 1,735 freight cars and 40 drovers' cars. The road had completed extensive shops at Aurora in 1856, and, as a result of experiments starting the same year, most of its locomotives were equipped to burn Illinois coal.

The Civil War added to the fever of westward ex-

pansion, and the C. B. & Q. was not among the laggards. Typical of western railroads, it built where no traffic existed; it created future centers of commerce; it colonized and sold land; it fought against sparse population, distance from supplies, eternal need for new money and scarcity of skilled labor.

Beyond the Mississippi

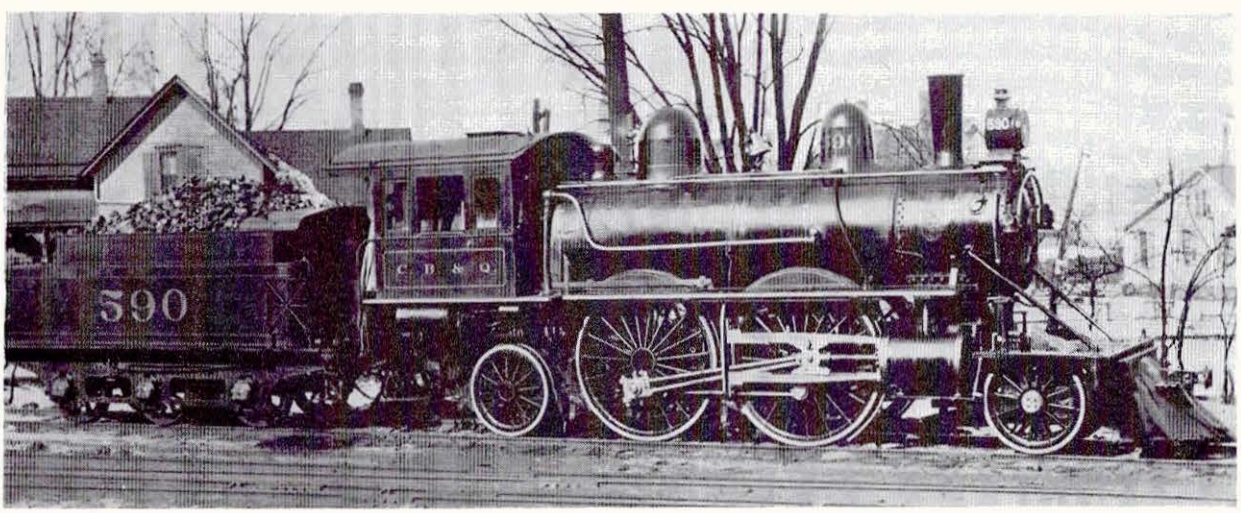
The oldest constituent line west of the Mississippi was the Hannibal & St. Joseph, chartered by local interests in 1847 to provide a short-cut between the Mississippi and Missouri rivers. In 1852 the Forbes group began to buy its securities and, largely with funds raised by them, the line was completed in February, 1859, constituting the first rail service to the Missouri. The next year the road inaugurated a service to carry mail to connect with the Pony Express as its western terminus, and on July 28, 1862, there was introduced the first railroad car in the country equipped for sorting mail in transit. The H. & St. J. built a number of branches—one of which, together with a bridge over the Mississippi, opened a physical connection with the C. B. & Q. at Quincy in November, 1868—and the other, in connection with the first bridge ever to span the Missouri, made possible through service to Kansas City starting in July, 1869.

Strongly supported by the Forbes group almost from the date of its chartering by local interests in 1852, the Burlington & Missouri appeared as the logical westward extension of the Burlington in Iowa. Despite the depression starting in 1857, the B. & M. reached Ottumwa, 75 mi. west of Burlington, in September, 1859. As soon as the Civil War ended, the road, in which the "Q" held increasing equity, resumed its westward push, reaching the Missouri at East Plattsmouth in January, 1870. Trackage over another Joy road gave access to Council Bluffs. In August, 1868, a bridge joined the B. & M. and the C. B. & Q. at Burlington and, four years later, the latter leased the former, with full purchase following in 1875.

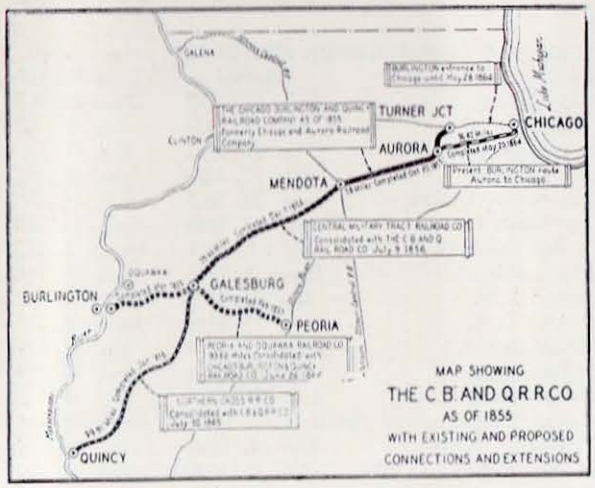
Even before it had spanned Iowa, the B. & M. planned to run lines into Nebraska and, in 1864, was authorized by Congress to build from Plattsmouth to a junction with the Union Pacific near the 100th Meridian. Construction of the Burlington & Missouri River Rail Road Company in Nebraska, as it was known, started in 1869. The next year it reached Lincoln and in 1871 it leased the Omaha & Southwestern, which gave it independent access to Omaha. In September, 1872, despite the difficulties of Indian

ROLL-CALL OF BURLINGTON PRESIDENTS

Name	Elected	Term Expired
Gale, Stephen F.	Feb. 22, 1849	Feb. 21, 1851
Wadsworth, E. S.	Feb. 21, 1851	Feb. 21, 1852
Gale, Stephen F.	Feb. 21, 1852	Feb. 21, 1853
Joy, James F.	Feb. 21, 1853	June 12, 1857
Van Nortwick, John	June 12, 1857	July 12, 1865
Joy, James F.	July 12, 1865	July 11, 1871
Walker, James M.	July 11, 1871	March 2, 1876
Harris, Robert	March 2, 1876	May 25, 1878
Forbes, J. M.	May 25, 1878	Sept. 29, 1881
Perkins, C. E.	Sept. 29, 1881	March 1, 1901
Harris, Geo. B.	March 1, 1901	Jan. 31, 1910
Miller, Darius	Jan. 31, 1910	Aug. 23, 1914
Holden, Hale	Aug. 27, 1914	July 18, 1918
Holden, Hale (regional director under U.S.R.R. Administration.)		
Perkins, C. E., Jr.	July 18, 1918	Feb. 15, 1920
Holden, Hale	Feb. 15, 1920	Jan. 1, 1929
Williamson, Frederick E.	Dec. 10, 1928	Dec. 31, 1931
eff.	Jan. 1, 1929	
Budd, Ralph	Dec. 8, 1931	
eff.	Jan. 1, 1932	



THE ONLY COLUMBIA-TYPE EVER BUILT—This unusual locomotive was built by Baldwin for the Burlington in 1895. It embraced numerous innovations, including a 2-4-2 wheel arrangement, 84¼-in. driving wheels, high leading truck, and six-wheel tender. One of the aims of its design was to achieve a wide and deep firebox without resorting to a double cab arrangement. No. 590 looked like a compound but was actually a simple type. It was equipped with piston valves which were located between the two cylinders



Courtesy Burlington Lines

attacks and construction in a virtual wilderness, the 194-mi. main line reached the U.P. at Kearney Junction. By the time the Missouri river was bridged at Plattsmouth in September, 1880, the company had put out numerous branches and built as far west as Indianola. In 1880 the C. B. & Q. acquired the Nebraska property by outright purchase and the following year construction gangs set out for Denver. The rails were joined in May, 1882, opening the first through line from Chicago to the Rockies under one management.

To the North and South

No single-track mind had the Burlington management of these days. Westward expansion was not permitted to interfere with the job of intensifying the existing system and putting out strong supporting lines to the north and south. Numerous branches were built from the main line in Illinois during the Seventies and, in 1877, lease of the St. Louis, Rock Island & Chicago provided a valuable north-south route in western Illinois and, by a short stretch of trackage rights, access to St. Louis. In 1885 the Chicago, Burlington & Northern was organized in the interest of the C. B. & Q. to build connections from C. B. & Q.-controlled branches terminating at Fulton and Oregon, respectively, to Savanna, whence it would build 300-odd miles north along the east bank of the Mississippi to St. Paul, to connect with the northern roads. Less than a year later, in October, 1886, the first train ran from St. Paul to Chicago over the new route in 11 hr., 10 min. By traffic arrangements and heavy bond ownership the C. B. & N. was operated as an integral part of the Burlington. In 1889 full purchase of the C.B.&N. and of a subsidiary road between Oregon and Aurora placed the entire Chicago-Twin Cities route under Burlington ownership.

The two decades from 1880 to 1900 saw continuous activity in expansion and consolidation by the Burlington. Among other things, there were completed an extension to Centralia, Ill., to tap the coal fields; an alternate main line across southern Nebraska through Wymore to Holdrege, and thence to Cheyenne, Wyo.; and a northwesterly line from Lincoln to Alliance and beyond to coal mines at Newcastle, Wyo. In 1894, the latter rails were extended still further to a connection with the Northern Pacific at Billings, Mont., thereby opening a short route between the Pacific Northwest and lower midwestern territory. From 1880 to 1890 the system grew from 2,772 to 5,216 mi., and in the last decade of the century expanded still further to 7,661 mi.

During all this development Forbes' prudent policies prevailed, so that total capitalization (less depreciation) per mile in 1901 was almost exactly the same as it had been in 1864—$29,000 a mile. In contrast, the national average for all roads in 1901 was more than $49,000.

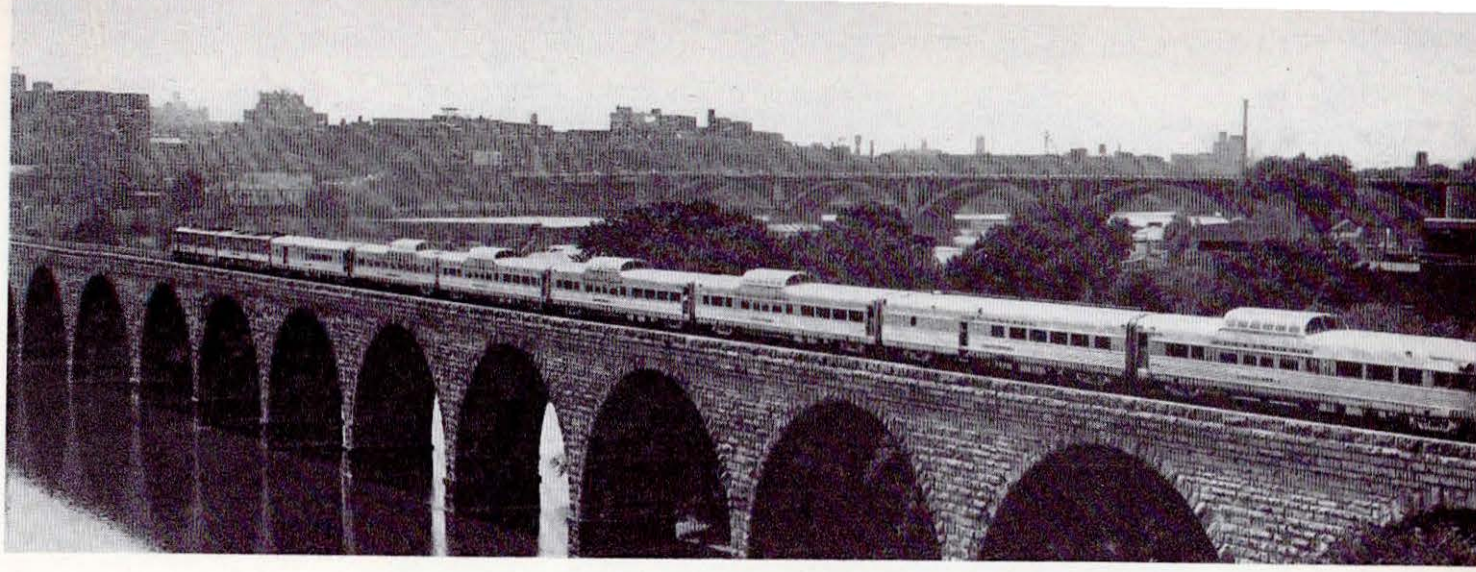
Integration and Control by Hill

In 1900 the Burlington purchased outright a number of important lines which hitherto it had held by lease or securities ownership. This integration included not only the St. Jo road and the Twin Cities route, but such other old and important subsidiaries as the Kansas City, St. Joseph & Council Bluffs, a Joy road completed in 1869; and the St. Louis, Keokuk & Northwestern, which, since 1879, had provided a west-bank route between St. Louis and Hannibal and in 1882 had reached West Quincy.

Mr. Forbes died in 1898. On April 25, 1901, the C.B.&Q. was sold to the Great Northern and Northern Pacific, then both controlled by J. J. Hill, at a price of $200 a share. It thereby became a part of a dual transcontinental system, while "the two Northerns" gained a prosperous road rich in grain, coal, manufactures and passenger traffic which would provide an outlet for *their* lumber, grain and ore.

With the Burlington safely in the bag, Hill went on to seek further means of balancing his traffic, a cardinal principle in his management. The most important step in this effort was acquisition, in 1908, of the 1,950-mi. Colorado & Southern and its subsidiary Fort Worth & Denver City and Wichita Valley roads. This group had started with a segment between Denver and Golden, Colo., in 1870, which was extended to Cheyenne, Wyo., seven years later. The route between Denver and Fort Worth, Tex., was opened early in 1888. In 1890 it came under the control of the Union Pacific. Following its bankruptcy in 1893, the latter lost control and, in 1898, the Colorado & Southern was organized to take over the U.P.'s interests, including a number of narrow-gage mountain roads in Colorado. For a decade the C. & S., with which the F.W.&D.C. was operated as a single property, spread out on its own account, acquiring, in 1905, a route from both Fort Worth and Dallas to Houston and Galveston, part of which it later transferred to joint operation with the Rock Island.

Shortly after the acquisition of the C. & S., Hill began construction of a low-grade line from Orin Junction, Wyo., northward through the Wind River Canyon to Billings, which, when completed in 1914, provided a better link with both of the northern lines. The construction of feeder lines in Texas between 1927 and 1932 marked the most recent expansion of the Burlington system.



WHAT MAKES THE BURLINGTON TICK?

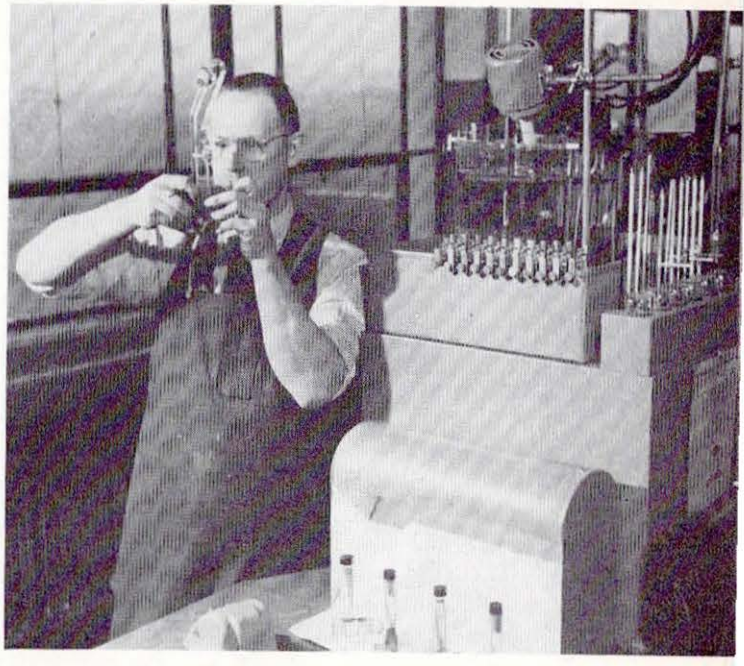
Some discussion of the art and science of railroading as practiced by several generations of "Q" management, together with a brief discourse on the railroad as a working laboratory

By RAILROAD ANALYST

"The policy of improving the property, which has given such good results in the past, is still being followed."

—From Annual Report of the Great Northern for 1889, by James J. Hill, who gained control of the Burlington in 1901

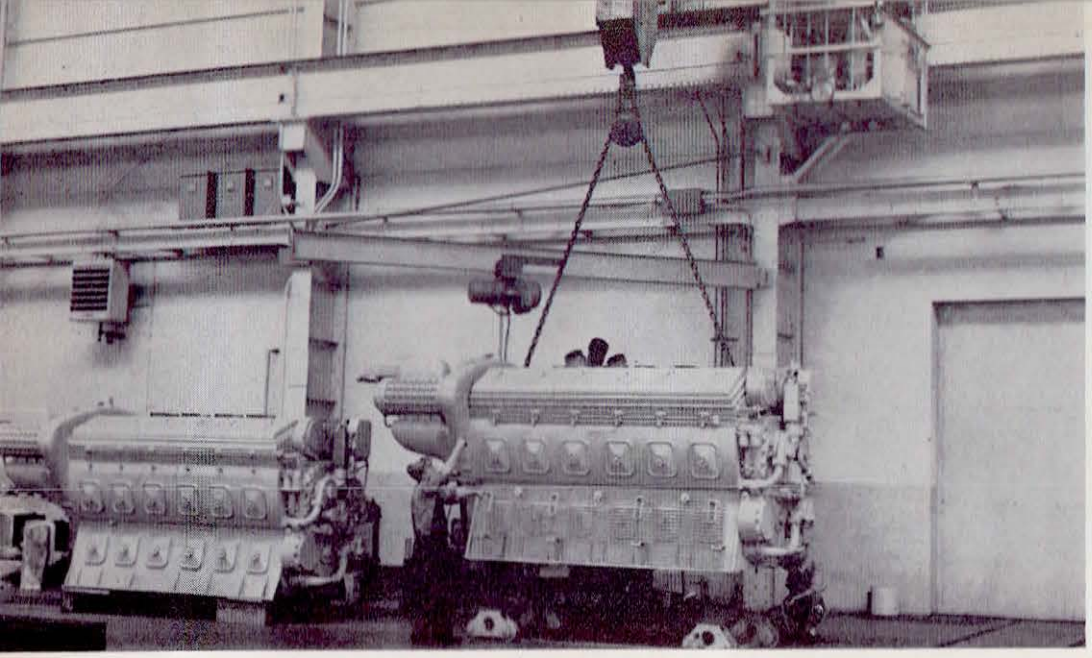
There's no place on earth like a vista dome for meditating about the railroad business. It's very quiet up there and one kind of glides along. You can see everything that goes on and take notice painlessly of the manifold improvements which make up a modern railroad. For example, on the Burlington's newest "Twin Cities Zephyr" from Chicago to Minneapolis, now one year old, you get a good look at either-direction multiple track between Chicago and Aurora; C.T.C. on the alternate single-track stretch thence to the Mississippi at Savannah, with many examples of recent re'ocation jobs to reduce grades and curvature; then the beautiful double-



The Burlington operated the first Vista Dome coach in the country. Its engineers were largely responsible for the structural design. Shown at top of page is the year-old "Twin Cities Zephyr" at Minneapolis

The Burlington is always busy trying out new things. In the storehouse (right above) at Aurora, Ill., a chemist is preparing to test petroleum products

A nerve-center for the system is the new hump yard at Lincoln, Neb., which pre-classifies for points all over the system and for connecting railroads



The Burlington is one of the country's largest users of Diesels and pioneered the Diesel-electric passenger locomotive. A traveling crane is lifting a Diesel motor in the road's shop in West Burlington, Iowa

track road along the big river north for 300-odd miles which, though full of curves, has been so engineered in recent years as to render it one of the fastest pieces of railroad in the country. There are brand new stations—as at LaCrosse—and a series of good-looking servicing facilities. And, of course, you are riding in the very latest "wrinkle" in passenger car design—the lightweight, stainless steel car with the novel "blister" atop.

A Shade from the Past

Since the vista dome is such an aid to thought, I decided, when the boss said to compile some statistics on the Burlington, to wander down to the coach yard at Sixteenth Street in Chicago and sit quiet-like in a parked vista dome coach to see if the atmosphere of the place might not lubricate my wits. It was long after midnight when I climbed the stairs to the dome and the last suburban train had steamed off 'round the curve. I gazed over the lights of a quiet yard and maze of station approach tracks; then settled back to put some order into the task assigned. I was deep in "operating ratio" and "investment per mile of road" when I heard a hollow cough from the seat across the aisle and a sepulchral voice complained: "Too bad they don't keep the steam on in these coach yards; this dome's as cold as the cars on the Mendota accommodation, back in my time."

Being an analyst, my reactions are slow, so instead of taking fright at this unexpected companion, I simply asked him what he meant by "my time" and was it in the up or down phase of the business cycle?

"I haven't the slightest notion what you are talking about," said he, coldly, in the best Harvard accent. "But, as my name is Joy, the word 'down' does not appear in my vocabulary. Naturally, I'm talking about the train I put on the 'extension' late in 1853; it was cold because you can't give every passenger his own stove, especially when so many of ours were Springfield deadheads."

Then it hit me! Like Scrooge I was talking to a shade—an apparition. For James F. Joy, first president of the Chicago & Aurora, and Chief Hustler in the early upbuilding of the C. B. & Q., was certainly not still on the pension rolls. I was having a visitation!

With the detached deliberateness which any analyst can muster in time of stress, I remarked: "I know all about you, Mr. Joy. You were the Henry Kaiser of the Fifties—plus a law degree of course. But what are you doing on private property of the Burlington at 1:24 a.m., A.D. 1949?"

"I have a lifetime pass on this road, young man, which gives me more right to be here than you. Your question is rude, but I'll answer it; have to keep in good with the press, you know, or you might side with that Michigan Southern crowd. I'm here because the wonderful old 'Q' is 100 years old next February 12, and I want to see whether she still knows how to railroad."

Now there is no quicker way to convert a skeptic than to challenge his facts. "Mr. Joy," I explained, with an injured air, "do you know that the Burlington is one of the best-run railroads in the country—has been for generations; that it has never missed paying a dividend in any year since 1862; that it has never defaulted on an obligation and that — considering its situation its operating ratio is outstanding."

"Yes, yes, I've seen that kind of stuff before in prospectuses," replied the Shade with impatience, "but they may be lying to Mr. Poor or maybe they're paying dividends out of stock money. Perhaps they just have one busy main line—like the Albany road back in Boston—or nice fat rates like the Camden & Amboy in Jersey. Anybody can do well with that kind of property."

This was too much—even for an analyst. "Now look here, Joy," I blurted out. "You can't do any fancy lying with the I.C.C. around. For another thing, the 'Q' never paid dividends it did not earn—even in your time. Third, its network is very much diffused—look at the map here—it runs all over the Mid-West. The Burlington's a 'Granger' road, and it has thousands of miles of very light 'gathering' lines. As a result, almost 47 per cent of the C. B. & Q. proper's 8,867 miles of line had an annual density in the high traffic year 1947 of less than a million net ton-miles a mile. In fact, more than 26 per cent of the mileage (or 2,265 mi.) had a traffic density under 100,000 net ton-miles —which is lean feed indeed. Hard to make a good

showing on a network like that; you have to be smart.

"As for rates, the Burlington's average ton-mile revenue in 1947 was only 0.941 cents compared with an average of 1.076 for U. S. roads as a whole and 1.081 for those in the central western region. Only ten Class I roads in the country had a lower average, and they were mostly in the coal, ore or export business. The Burlington, on the contrary, is a general carrier and moves a big load of passengers, merchandise and headaches like that. It lies in one of the most competitive territories on earth as far as railroads themselves go. It suffers from highway competition as much as any railroad and, in addition, suffers from subsidized waterway rivalry on the Mississippi, Missouri and Illinois. So don't go looking for special advantages when you take the 'Q' apart.

"Of course"—and here I looked coyly at Joy—"inherited 'know-how' has something to do with it."

The Shade beamed—brightly as a shade can—nodded its head and reminisced. "Yes, young man, we did have 'know-how'—to use your childish expression—but we didn't *inherit* it; we learned it the hard way—by trying everything. For instance, when we started to build the Mendota extension in 1852, we were dissatisfied with the performance of the light 19½ lb. strap rail on the original Aurora Branch and rejected Steven's 'T' rail because the soft iron they made it of wore out too fast at the ends. I had a committee look into English 'compound or continuous' rail, which, while T-shaped, was split in two parts, divided along the vertical axis, which, when riveted or bolted together, made a continuous bearing surface. We bought some and laid it on the Mendota line."

"Did it solve the problem?"

"Not at all," said the Shade. "We got into all kinds of trouble with it; but it taught us a new important fact about rail—that its durability is more a matter of the quality of the metal than of design. After that we insisted on good iron and, later, good steel."

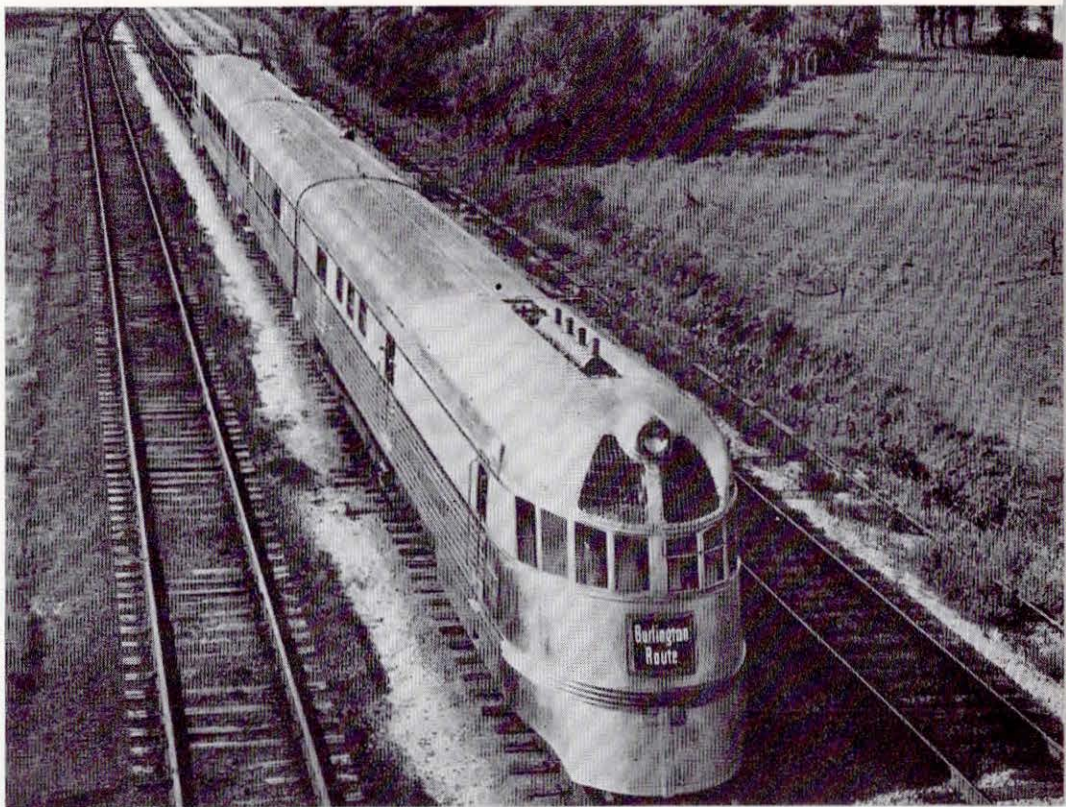
"As a matter of fact," I observed, "the Burlington has never let up in the search for the best running surface possible. In 1943, for example, the road adopted as standard a 129-lb. rail section known as T-R (torsion resisting) designed by one of its own engineers, which was developed on the property. The road still possesses the excellent habit of 'trying everything.'

"You know, Mr. Joy, that—just as in your day—a progressive railroad has to be a regular working laboratory. It is almost impossible for any but a few large manufacturers to build facilities to test new devices for railroads' use, and even they try out their laboratory-tested products under real operating conditions before they put them on the market. This is a fact which distinguishes railroads from other carriers. Truck lines, for example, buy whatever model vehicle International, G.M.C., Ford or others are putting out; air lines let the aircraft manufacturers do the experimenting and testing. But you can spot a progressive railroad merely by adding up the devices it is putting under test at any one time.

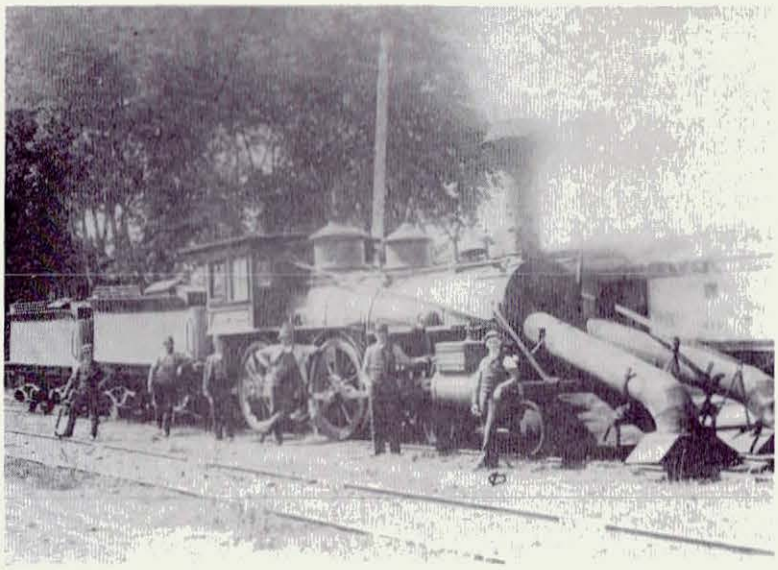
Not Only Tries But Initiates

"The Burlington has long been noted for the degree to which its staff and plant are dedicated to the testing and development of new products." Then, diving into my brief case, I came forth with a list (see Table I). "Look at this roster of devices which are currently being tried out on the system, on which tests have recently been completed, or on which development work is contemplated in the near future. This array of work in progress is proof of the extent to which this great operating property is also a gigantic 'lab,' in which freight and passengers, wear and tear, rain and corrosion are the ingredients of scientific study."

The shade of Joy seemed genuinely pleased that his railroad was still trying out everything. "But I



The first Diesel-driven lightweight streamliner in the country was built for the Burlington in 1934 and established a record for speed over distances greater than 1,000 miles by running the 1,015 miles from Denver to Chicago in 13 hr., 5 min.



The Burlington is noted for its willingness to experiment. This weedburner (left) operated on the Aurora-Mendota Division back in 1888

Attractive new stations (such as that on the facing page) start and finish pleasant journeys on the Zephyr fleet

wonder," he said, with a superior air, "if this Ralph Budd and his men ever think up anything themselves. It is all well and good to try out some supply salesmen's samples, but, in *my* time, we never saw a salesman. We had to dream up what we wanted and go beg somebody to make it. I remember that we talked somebody into making a 'steam excavator' for us back in 1869 and moved dirt with it at a cost of eight cents a yard. We searched all over the country for something better than our rotting wooden trestles, and finally got a span from a man named Howe to do the job."

"You were good, too," I wisecracked, "but remember that quite a few items on my list of 'experiments' originated on the Burlington. Besides, there is no use quarreling about whether the railroad or a supplier should get the credit for something new. Lots of times you can't tell them apart. Did you ever hear of the case of 'the two Ernies'?"

Case of the Two Ernie's

"It that something by Mark Twain?" asked the Shade.

"An analyst can hardly be expected to waste time with fiction," came my retort. "The two Ernies were two real men among the many who helped push railroading forward. One of them, Ernest Kuehn, grew up with Electro-Motive as a production man; he retired just last year. The other, Ernest Weber, spent his life with the Burlington mechanical staff, working chiefly with internal combustion power. The two became associated early in the Twenties when the Burlington, which was to own more gasoline-electric motor rail-cars than any other railroad, tried out H. L. Hamilton's products as the answer to its light-traffic passenger-mail-express problem. It was hard to tell who of the Ernies was working for Electro-Motive and who for the Burlington. They were inseparable.

"But an even greater field opened for the two Ernies and their respective employers. Early in 1934, President Budd of the Burlington started his experiment to see if his railroad couldn't win back passenger traffic by putting on a radically different lightweight, streamlined, articulated train, powered by an internal combustion engine. He ordered a three-car, stainless steel train from the Budd Company; for power he turned to Electro-Motive. But General Motors' C. F. Kettering wasn't sure yet, he said, whether the Winton Diesel he was developing would run, and was by no means ready to sell one. He suggested that the Burlington wait and take a look at the engines which would run the exhibition automobile assembly line at the Century of Progress that summer. After looking with his staff at the newly developed engines—operating, of course, as stationary and not mobile power plants—and talking with E.M.D. officers (who, on the whole, were not optimistic about the child) Mr. Budd ordered a 660-hp. model for his first 'Zephyr.' As a recent history of Electro-Motive Division puts it, 'Thus it happened that a railroad president forced the issue and speeded the acceptance of Diesel motive power for the nation's railroads.'

"Then the 'two Ernies' and their colleagues got to work. E.M.D., the Burlington and E. G. Budd were on the spot; the issue was joined. Joint work at Cleveland; joint work at Philadelphia; joint work at Aurora. Result: the historic 'dawn to dusk' run of the 'Zephyr' from Denver to Chicago on May 26, 1934. Sometime after the papers had stopped talking about the feat and the 'on-time' appearance of the Zephyr on the stage of the pageant at the World's Fair, it came out that, behind the performance, was a story of courage and ingenuity in which Henry Urbach, Burlington's superintendent of motive power, and his Ernie, and E.M.D. and its Ernie fought and won against time, against cracked armature bearings, against a burned out engine starter cable and against falling air brake pressure."

"Apparently the old—how do you say it—'know-how' has been kept alive on my railroad," remarked the Shade, and I was pleased to see that I had penetrated his veil of superiority.

"But I must remind you," he said, "that this was a

case of new application for a device long in satisfactory service elsewhere. How about something revolutionary, like the sleeping cars we designed and put on the road in 1858—a year before George Pullman introduced his first car. Match that!" and he lighted a spectral cheroot.

Cab's Eye View for Passengers

"Aha, you lead right into my next piece of evidence," I cried triumphantly. "In fact, you're sitting in it. This dome is the most dramatic possible proof of the joint nature of experimental work in railroading and, at the same time, the 'will to try' of the Burlington. As he was riding in the high cab of one of his new Diesels out in Colorado, General Manager Cy Osborn of E.M.D. thought it would be fine if passengers could see the railroad and scenery like that. The means came to him later as he rode a caboose cupola. Sure, put the passenger above the roof line and give him the world. But there were serious technical problems. Could a car be built with a second story in its middle which would clear structures, yet not suffer unduly in structural strength. To his friend Ralph Budd he went with his sketch and said, 'If you think this idea is crazy, I'll throw it away and nobody will ever hear of it.' The Burlington head looked over the drawing carefully for a short while; then called H. H. Urbach, his mechanical chief, and told him that a Zephyr car currently going through the shops was going to have 'something added' and that he and the Budd Company better get together on a suitable 'vista dome' therefor. Jointly the late Col. E. J. W. Ragsdale of Budd and his staff and the Burlington's mechanical men produced some months later a standard Zephyr coach converted into the first dome coach in the country."

Since even analysts run out of breath, I paused, after pointing out that these two tales were but examples of the manner in which the Burlington carries on development work with many scores of manufacturers, and that I could tell him one about poppet

TABLE I—THE BURLINGTON IS A WORKING LABORATORY —SOME MECHANICAL MATERIALS AND DEVICES NOW BEING TESTED ON THE SYSTEM

In the Test Laboratory

Heliarc spot welding of stainless steel, to determine possible substitution for shot welding and whether advisable in passenger car construction

Holding power of stay bolt heads in locomotive side sheets removed from service, to determine the advisability of using welded stay bolts versus the conventional upset head

Heat treatment of tool steel, to obtain better service and to account for failures

Failures in car, locomotive, structural, and rail parts to determine the causes and prevention of failures

Cracked Diesel cylinder heads, to determine cause and possible elimination of this failure

Bond between lining metal and bearings and its possible relation to production methods in manufacturing

Grain size, chemical analysis, and pouring temperature of bearing lining metals, with a view to producing better bearings

New types of paints and finishes, to determine their adaptability for railroad use

On the Road

Diesel locomotives in suburban service, to determine traction motor heating

Diesel freight locomotives, to determine transition and governor control requirements

Steam locomotive equipped with poppet valves

Nickel-clad firebox steel in steam locomotive fireboxes

Seal-welded stay bolts in the fireboxes of conventional steam locomotives

Seventy-ton, open-top hopper cars equipped with roller bearings, to determine the effect of the latter in hump yard operation

Special wheels, gun-iron piston rings, welded cylinder liners and heads, improved V-belt drives in Diesel locomotives

Pyroxylin lacquers on passenger cars; fiber-glass insulation on steam train lines; special treated flooring in passenger cars; low-carbon cast iron wheels on freight cars

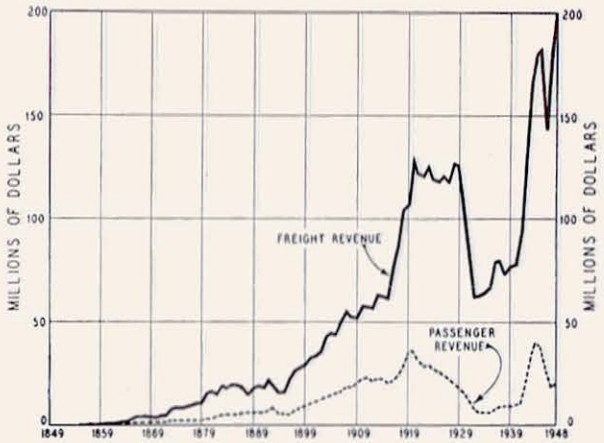


Fig. 1.—Trends in passenger and freight revenues of the C.B. & Q.

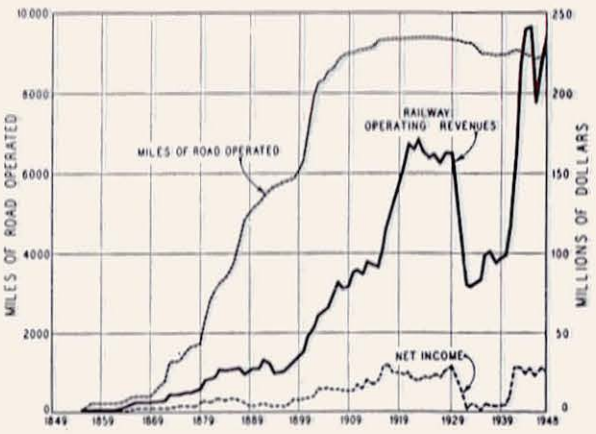


Fig. 2.—Mileage, revenues and net income since the Eighteen-Fifties

valves for steam locomotives and another about disk brakes for streamliners.

My hearer raised his hand. "All right. You've scored, young fellow. But it sounds to me like this up-to-date Burlington crowd is a spendthrift outfit. I ran a progressive road and made lots of improvements, but I never let the spirit of adventure get out of hand. We Boston men held ourselves stewards for the security-holders and no monkeyshines. We stretched the greenback for fair."

"Don't worry, Ghost of the Past," I replied. "Your successors make the eagle scream just as loud. Let's look at a few statistics." And I reached again into the brief case.

"Now before you take in any money to save you have to have traffic. That's why you, Mr. Joy, worked so hard to build up in a few short years an integrated system of rails strategically located. The problem's still to get traffic, but the means are changed. Service is the big weapon now—not strategic location. Service takes good equipment, good roadway and good operations, which, in turn, cost money. Take a look at the line showing passenger revenue in Fig. 1 here and notice the quick upward bend in the middle of the depression of the Thirties. That bend, sir, spells 'Zephyrs.'

"In the period 1921 to 1947, inclusive,—which includes seven years of deep depression—the C. B. & Q. spent an average of $5.8 million a year net for additions and betterments (including road and equipment and after retirements and adjustment of previous year's charges). This magnitude of spending shows up—to give but one case—in the low average age of the Burlington freight car fleet, compared with railroads in general:

Years Old (Based on orig. date built)	Age of Freight Cars (As of Jan 1, 1948) C. B. & Q. Per cent of total	U. S. Class I Roads Per Cent of total
1 to 5	18.06	11.47
6 to 10	15.65	13.09
11 to 15	11.27	8.11
16 to 20	9.10	11.20
21 to 25	27.48	23.35
26 to 30	8.25	11.81
Over 30	10.19	20.97
	100.00	100.00

"Capital expenditures show up even more clearly in the comparative showing of the Burlington's passenger cars which make up one of the largest fleet of streamlined trains in the country. Average age is low, despite the influence of a relatively large group of older suburban coaches:

Years Old (Based on orig. date built)	Age of Passenger-train Cars (As of Jan. 1, 1948) C. B. & Q. Per cent of total	U. S. Class I Roads Per Cent of total
1 to 5	29.39	5.25
6 to 10	7.52	4.89
11 to 15	4.39	4.60
16 to 20	11.02	13.38
21 to 25	12.10	24.27
26 to 30	9.59	6.91
Over 30	25.99	40.70
	100.00	100.00

"It is a fundamental axiom of the railroad business . . . . ."

But here my companion interrupted. "You're going to say, sir, that 'you have to spend money to make money.'"

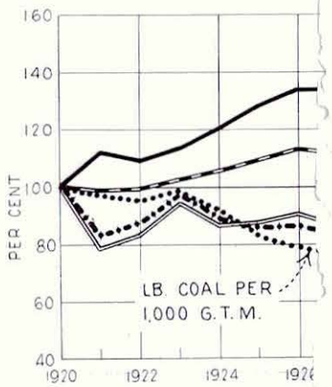
"Right you are, Mr. Joy."

"We did it in the old days, although perhaps without thinking about it that way. I grew so enraged looking for timber for fuel and paying exorbitant prices after finding it, that I got our men to try coal burners very early in the game. They cost like the devil on capital account, but they pulled expenses way down."

"The impact of wise capital investment is even greater today, Mr. Joy, because railroads work on narrower margins than in your time. My next graph (Fig. 2) shows what the Burlington management has had to work with in the way of mileage and revenues over the years. The secular trend of the latter has been up, but there were painful dips in between. Yet, observe that, in due proportion to total operating revenues, management consistently attained net income in every one of the 97 years for which we have comparable figures.

"The operating ratio has serious defects as a measuring rod of efficiency because it is greatly influenced by relative traffic density, but it is the best general index we have. The average ratio for the Burlington over the period 1921-1947 was 70.9 per cent, compared

Fig. 5.—HOW BURLINGTON MAI IMPROVED ITS PERFORMANCE—Im freight performance show that im C.B. & Q. in moving loads efficientl the concurrent rises in traffic—a sure roading



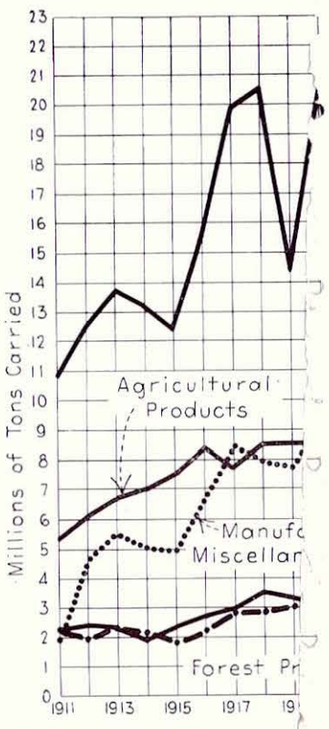


Fig. 6.—How the relative importa

with 74.1 per cent for all Class I roads. That difference of 3.2 explains the relatively high net income the C. B. & Q. has enjoyed.

Making the Eagle Scream

"Figures 3 and 4 here (ton-miles and passenger-miles) show the actual work performed by the C. B. & Q. since 1890. Notice the terrific load the road carried in World War II."

"I suppose," interrupted the Shade, "the road just got more and more equipment and men to do this job."

"Quite the opposite. It did the job with fewer locomotives and cars and with greater average output."

"How did you get everybody to work harder? I had trouble keeping the men to a twelve-hour day."

"The cars and locomotives work harder, not the men. There is far less real physical toil on the road. Look please, Sir Shade, at my prize exhibit (Fig. 5). Here before you lie the kernels of good management—the indices of freight train performance. Note that net ton-miles carried had had a marked influence on the performance indices, but mark also that, since 1933, the latter have been bettered far out of proportion to traffic carried. That is where good operating practice comes in.

"Let's take 'gross ton-miles per freight train-hour' and see how the C. B. & Q. has improved, compared both with its own performance and with that of all roads:

Yr.	C. B. & Q.	All Class I Roads
1936	27,385	29,200
1937	28,767	30,347
1938	30,357	31,141
1939	32,145	32,808
1940	33,178	33,811
1941	35,158	34,684
1942	37,470	35,510
1943	38,934	35,979
1944	40,920	37,298
1945	41,747	36,954
1946	42,217	37,071
1947	44,290	38,462
1948 (Oct.)	48,656	———

"The Burlington shows an uninterrupted upward climb, and has surpassed the national average in every year since 1940.

"Again, look at speed of movement and utilization of scarce equipment evidenced in 'car-miles per freight car-day' (serviceable cars):

Yr.	C. B. & Q.	All Class I Roads
1936	46.5	35.3
1937	45.6	35.9
1938	39.7	31.8
1939	42.1	35.7
1940	43.5	38.0
1941	49.1	42.6
1942	57.5	47.6
1943	61.0	49.7
1944	60.7	50.6
1945	61.1	48.1
1946	57.8	44.2
1947	62.7	47.6
1948 (Oct.)	72.1	———

Greater Than Average Dieselization

"The extent to which the C. B. & Q. has Dieselized its road-haul operations is another example of investment to better service and cut expenses. Progressive installations have been made, starting with the country's first Diesel-powered rail unit, for the "Pioneer Zephyr" in 1934; the first switcher unit on the road in the same year; separate passenger locomotives starting in 1936; and freight locomotives in 1944.

"In the first ten months of 1948, the C. B. & Q. hauled 48.3 per cent of its total gross ton-miles in freight service with Diesel locomotives, compared with 28.5 per cent Diesel or electric haulage by roads in the Western district and 23.2 per cent by all Class I roads in the country. The Burlington is even more conspicuous in extent of motorization of passenger service: In the first ten months of 1948, it handled 80.1 per cent of its passenger-train car-miles by Diesel-locomotives and Diesel or gasoline-electric rail-cars, compared with 48.3 per cent so handled by other than steam locomo-

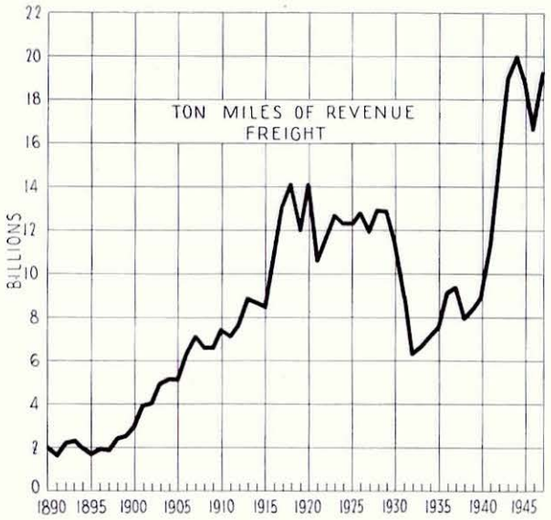
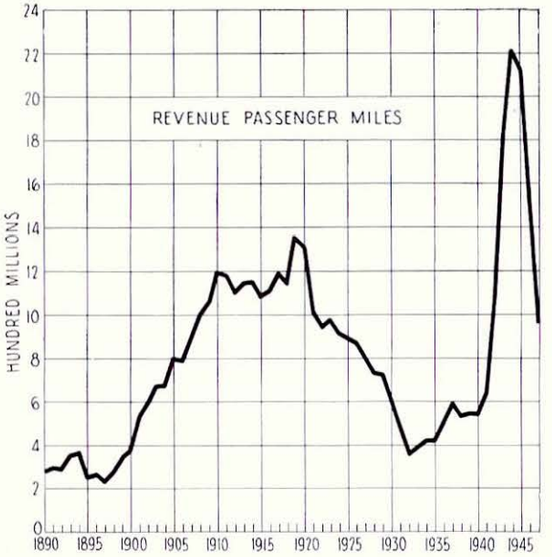


Fig. 3.—The trend of ton-miles since 1890

Fig. 4.—The trend of passenger-miles on the Burlington since 1890 has been greatly influenced by an increase in average distance traveled



Railway Age—Vol. 126 No. 6

Ralph Budd has headed the Burl
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"I must say," remarked th
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Island, Neb., is another.

"The spirit lives on. Lo
circuitous and hilly route
Kansas City, the Burlington,
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ROCK ISLAND INAUGURATES DIESEL

One of the Fairbanks-Morse 1,500-hp. Diesel suburban locomotives

The first regularly scheduled Diesel suburban service in the Chicago area was inaugurated January 6 by the Chicago, Rock Island & Pacific between Chicago and Joliet, Ill., with the assignment of two 1,500-hp. suburban locomotive built by Fairbanks, Morse & Co. The use of Diesel power on some, and perhaps eventually on all, of its suburban trains is part of the road's plans for a complete rehabilitation of this service, including 20 new streamline coaches and the remodeling of existing rolling stock. The locomotives are assigned to service between Chicago and Joliet, Ill., and between Chicago and Blue Island, Ill., distances of 40.2 and 15.7 miles, respectively.

Schedules Carefully Planned

To get maximum mileage from the locomotives, a careful assignment was made for each so that it completed a week-day cycle once in two days. As shown in the graphs for the Monday-to-Friday schedules, locomotive No. 1 leaves Blue Island just before five o'clock Monday morning and between that time and approximately 12:40 a.m. Tuesday morning makes two-and-one-half round trips between Blue Island and Chicago and two-and-one-half round trips between Chicago and Joliet, tying up at Joliet. Locomotive No. 2 leaves Joliet on Monday morning at about 7:35 a.m. and between that time and about 12:40 a.m. Tuesday, makes three-and-one-half round trips between Joliet and Chicago and one-and-one-half round trips between Chicago and Blue Island, tying up at Blue Island. On Tuesday, the schedules made by the two locomotives are reversed.

This alternation continues until Saturday when each locomotive makes two-and-one-half round trips each between Blue Island and Chicago and Joliet and Chicago respectively, locomotive No. 1 starting from Joliet and terminating at Blue Island and locomotive No. 2 starting from Blue Island and terminating at Joliet. On Sunday, each locomotive makes two round trips between each of the two sets of terminal points, locomotive No. 1 starting from Blue Island and terminating at Blue Island and locomotive No. 2 starting at Joliet and terminating at Joliet. Thus, each locomotive performs a complete cycle during the week and starts from the same point each Monday morning.

Locomotive Details

The weekly mileage for locomotive No. 1 is 1,998.6 and for locomotive No. 2, 2,047.6, a daily average of 285.5 miles and 292.5 miles, respectively. As shown on the diagrams, layovers between runs during the day are relatively short. The night layovers at Blue Island between weekday schedules are approximately 4¼ hours; those at Joliet just short of 7 hours. On

with 74.1 per cent for all Class I roads. That difference of 3.2 explains the relatively high net income the C. B. & Q. has enjoyed.

Making the Eagle Scream

"Figures 3 and 4 here (ton-miles and passenger-miles) show the actual work performed by the C. B. & Q. since 1890. Notice the terrific load the road carried in World War II."

"I suppose," interrupted the Shade, "the road just got more and more equipment and men to do this job."

"Quite the opposite. It did the job with fewer locomotives and cars and with greater average output."

"How did you get everybody to work harder? I had trouble keeping the men to a twelve-hour day."

"The cars and locomotives work harder, not the men. There is far less real physical toil on the road. Look please, Sir Shade, at my prize exhibit (Fig. 5). Here before you lie the kernels of good management—the indices of freight train performance. Note that net ton-miles carried had had a marked influence on the performance indices, but mark also that, since 1933, the latter have been bettered far out of proportion to traffic carried. That is where good operating practice comes in.

"Let's take 'gross ton-miles per freight train-hour' and see how the C. B. & Q. has improved, compared both with its own performance and with that of all roads:

Yr.	C. B. & Q.	All Class I Roads
1936	27,385	29,200
1937	28,767	30,347
1938	30,357	31,141
1939	32,145	32,808
1940	33,178	33,811
1941	35,158	34,684
1942	37,470	35,510
1943	38,934	35,970
1944	40,920	37,298
1945	41,747	36,954
1946	42,217	37,071
1947	44,290	38,462
1948 (Oct.)	48,656	

"The Burlington shows an uninterrupted upward climb, and has surpassed the national average in every year since 1940.

"Again, look at speed of movement and utilization of scarce equipment evidenced in 'car-miles per freight car-day' (serviceable cars):

Yr.	C. B. & Q.	All Class I Roads
1936	46.5	35.3
1937	45.6	35.9
1938	39.7	31.8
1939	42.1	35.7
1940	43.5	38.0
1941	49.1	42.6
1942	57.5	47.6
1943	61.0	49.7
1944	60.7	50.6
1945	61.1	48.1
1946	57.8	44.2
1947	62.7	47.6
1948 (Oct.)	72.1	

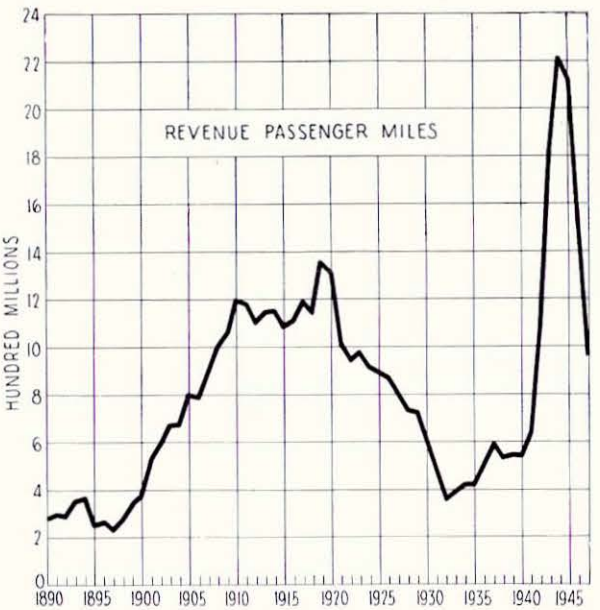
Greater Than Average Dieselization

"The extent to which the C. B. & Q. has Dieselized its road-haul operations is another example of investment to better service and cut expenses. Progressive installations have been made, starting with the country's first Diesel-powered rail unit, for the "Pioneer Zephyr" in 1934; the first switcher unit on the road in the same year; separate passenger locomotives starting in 1936; and freight locomotives in 1944.

"In the first ten months of 1948, the C. B. & Q. hauled 48.3 per cent of its total gross ton-miles in freight service with Diesel locomotives, compared with 28.5 per cent Diesel or electric haulage by roads in the Western district and 23.2 per cent by all Class I roads in the country. The Burlington is even more conspicuous in extent of motorization of passenger service: In the first ten months of 1948, it handled 80.1 per cent of its passenger-train car-miles by Diesel-locomotives and Diesel or gasoline-electric rail-cars, compared with 48.3 per cent so handled by other than steam locomo-

Fig. 3.—The trend of ton-miles since 1890

Fig. 4.—The trend of passenger-miles on the Burlington since 1890 has been greatly influenced by an increase in average distance traveled



Ralph Budd has headed the Burlington for 16 years. He is considered the dean of railroad presidents

tives by Western District lines and 44.5 per cent by all Class I roads."

"I must say," remarked the Apparition, after this avalanche of figures, "that your modern Burlington sounds remarkably big and efficient, but dull as afternoon tea on Beacon street. In my time we had to fight for traffic against all kinds of rivals and, where there were none existing, we had to build up the country and create it."

"Mr. Joy," I responded, "from my previous description of the road's competition, you ought to realize that traffic doesn't fall into its lap. The road is, if anything, more aggressive than ever. Look at the change in the commodity make-up of the Burlington's traffic (Fig. 6), and you will be impressed with the serious losses in traffic for which management has had to find a substitute. The rise in relative importance of 'manufactures and miscellaneous,' most competitive of traffic, is evidence not only of successful salesmanship and service but as well of zeal in getting industry to locate and develop in the road's territory.

"A great traffic story lies in the complex of extensions, line changes, motive power improvement and rate reductions by which, starting in 1899, the Burlington *created* all-rail coal traffic from southern Illinois to the Twin Cities and north and west thereof, in competition with lake-borne coal. Another example of traffic strategy was the opening of the Paducah (Ky.) gateway to and from the South in 1918. Careful nurturing of the highly perishable and seasonal sugar beet traffic since the first sugar beet factory in the Middle West was opened on the Burlington at Grand Island, Neb., is another.

"The spirit lives on. Long dissatisfied with its circuitous and hilly route between St. Louis and Kansas City, the Burlington, in 1946, joined with the Santa Fe in a plan to obtain a direct passenger and freight line between those cities by purchase of about 158 mi. of the old Alton (now G. M. & O.) for a portion of the route. The Interstate Commerce Commission rejected the plan in 1948. Now the Burlington has come forth with a separate plan whereby it would use the G. M. & O. segment by traffic rights. Such joint use would justify 'moderate expenditures' necessary to make 'an excellent route for the movement of through freight.'

"Aggressiveness in the passenger field was demonstrated in the road's pioneering of the Diesel-powered streamlined train and the vista dome. It is manifested by the operation of its fleet of 'Zephyrs'—all Diesel powered stainless steel streamliners on daily schedules:

Denver Zeph'yr	Chicago, Omaha, Lincoln, Denver
Twin Zephyrs (twice daily)	Chicago, St. Paul, Minneapolis
Nebraska Zephyr	Chicago, Omaha, Lincoln
Silver Streak Zephyr	Kansas City, Omaha, Lincoln
Mark Twain Zephyr	St. Louis and Burlington (Ia.)
Zephyr Rocket	St. Louis, St. Paul, Minneapolis
Texas Zephyr	Dallas, Ft. Worth, Denver
Sam Houston Zephyr	Houston, Dallas, Ft. Worth
Pioneer Zephyr	Dallas, Houston
Zephyr 9902	Chicago, Burlington, Hannibal
California Zephyr (Eff. March 20)	Chicago, Denver, Salt Lake City, San Francisco

"In addition the Burlington has part ownership of the new and fully streamlined 'Empire Builder' and 'North Coast Limited,' and has placed scores of new cars on five additional limited trains, four of which are normally Diesel-hauled."

"A Little Bit Every Year"

Early dawn hit the windows of our vista dome, and my companion became restless. "Before I go," he asked, "Can you tell me why the Burlington's management behaves the way it does? As a lawyer, I'm interested in first causes."

"The answer is simple, sir," I responded. "In general, it is that the Burlington has a heritage of good management and sound precept. In particular it is that Ralph Budd, president since January 1, 1932, has had the advantage of two great influences in his life, to which he modestly lays all his success—the early and long friendship and guidance of James J. Hill and John F. Stevens, the great civil engineer. The former, one of the greatest of railroaders, laid down a philosophy of management which Mr. Budd has carried on—tempered of course to meet today's competitive conditions. His aim was constantly to reduce the cost of transportation service while improving its quality.

"Ralph Budd has practiced a policy he learned from Hill of 'constant striving for perfection' by the device of selecting each year some segment of the line which was 'troublesome' and working on it to bring it up to standards 'as good as the best.' That, in the broadest sense, is the story of the Burlington."

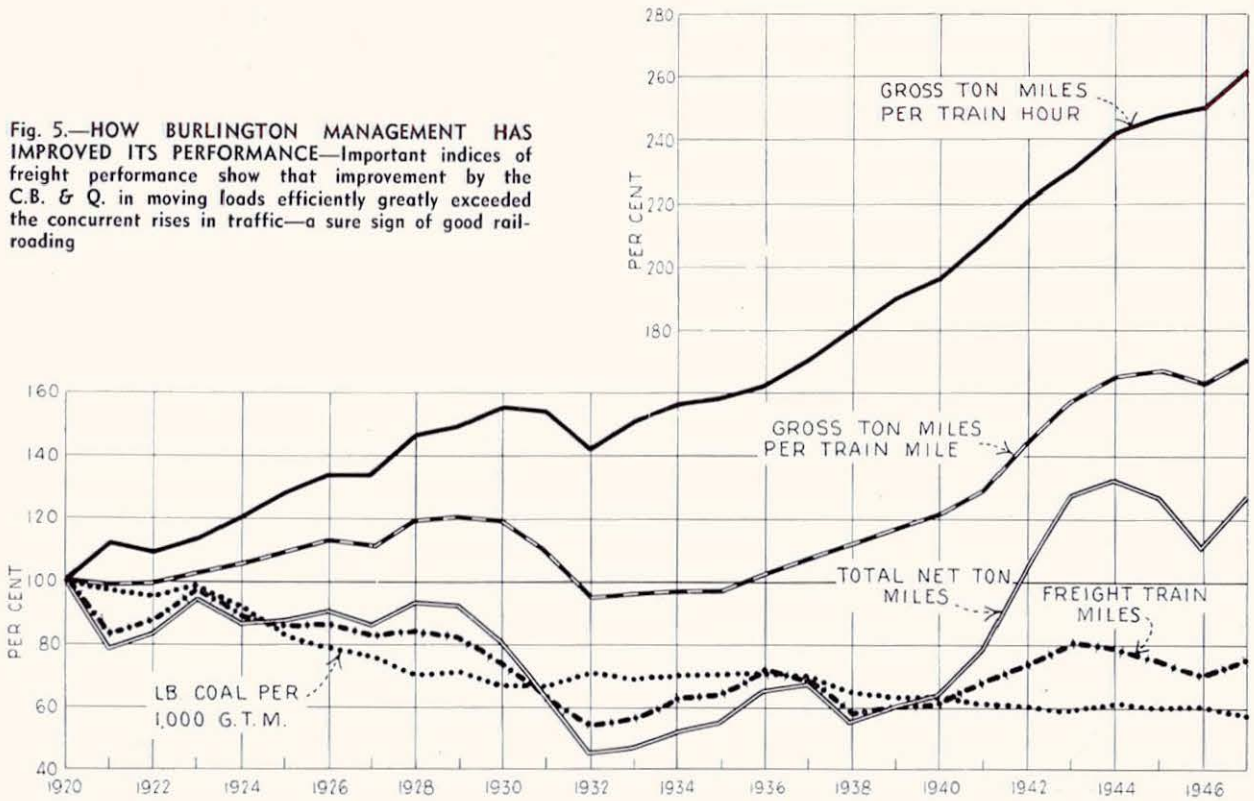
There was a spell of silence. My companion appeared impressed. Then he turned and said, "It is almost light, and I must go. I leave satisfied. Nice to have talked with you, young man."

"After you, sir," I stuttered out, pointing to the stairs leading down from the vista dome.

"I'm going *up*—not down," said my conferee.

And he did!

Fig. 5.—HOW BURLINGTON MANAGEMENT HAS IMPROVED ITS PERFORMANCE—Important indices of freight performance show that improvement by the C.B. & Q. in moving loads efficiently greatly exceeded the concurrent rises in traffic—a sure sign of good railroading



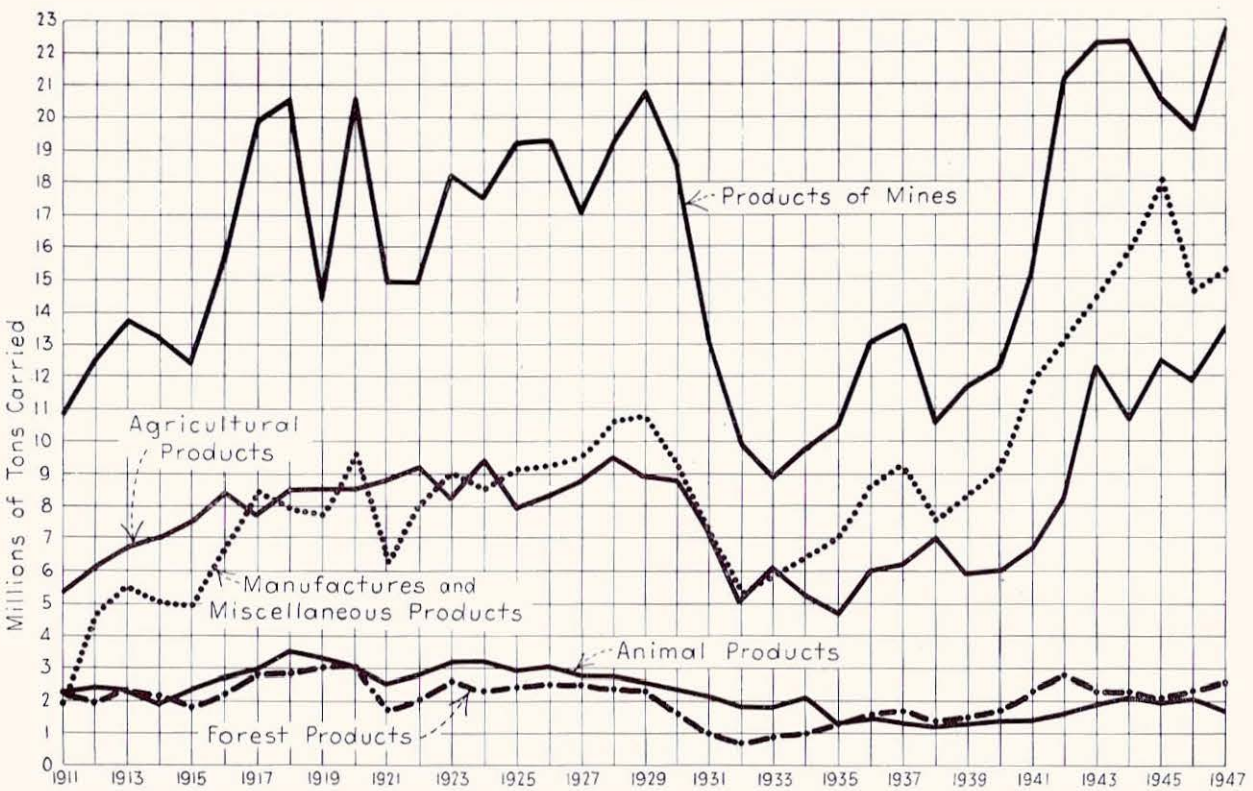
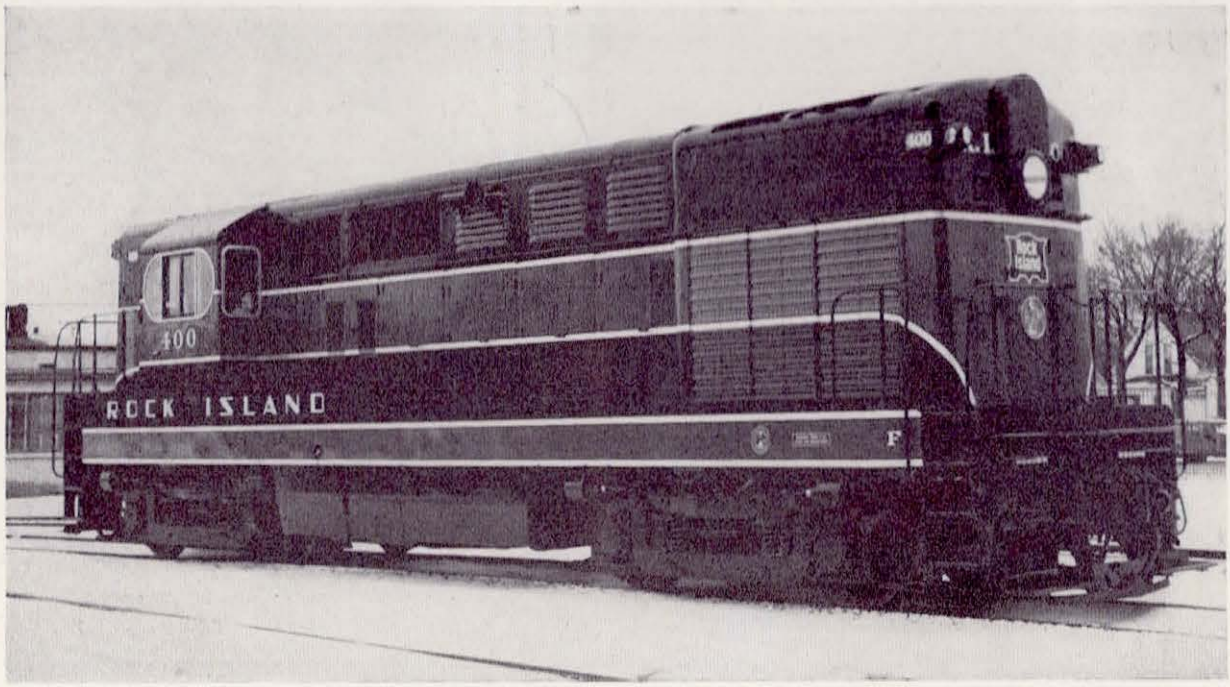


Fig. 6.—How the relative importance of commodities hauled on the C.B. & Q. has shifted since 1911

ROCK ISLAND INAUGURATES DIESEL



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Schedules Carefully Planned

To get maximum mileage from the locomotives, a careful assignment was made for each so that it completed a week-day cycle once in two days. As shown in the graphs for the Monday-to-Friday schedules, locomotive No. 1 leaves Blue Island just before five o'clock Monday morning and between that time and approximately 12:40 a.m. Tuesday morning makes two-and-one-half round trips between Blue Island and Chicago and two-and-one-half round trips between Chicago and Joliet, tying up at Joliet. Locomotive No. 2 leaves Joliet on Monday morning at about 7:35 a.m. and between that time and about 12:40 a.m. Tuesday, makes three-and-one-half round trips between Joliet and Chicago and one-and-one-half round trips between Chicago and Blue Island, tying up at Blue Island. On Tuesday, the schedules made by the two locomotives are reversed.

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SUBURBAN SERVICE WITH TWO 1,500-HP. LOCOMOTIVES

Fairbanks-Morse units attain daily mileages as high as 328.5 on runs of 15.7 and 40.2 miles between Chicago and two local points

One of the Diesel locomotives leaving Chicago with a Joliet-bound commuter train

Saturday and Sunday nights layovers vary somewhat because of the differences in schedules on those days.

The basic design of the suburban locomotive is a modification of the Fairbanks-Morse 1,500-hp. all-purpose locomotive. It has the standard Fairbanks-Morse opposed-piston engine of the same design used in that company's 1,000-hp. switchers, 1,500-hp. all-purpose locomotives and 2,000-hp. road locomotives.

The four traction motors and the main generator are made by Westinghouse. The former are series-wound, force-ventilated type 370-F. The main generator is the type 472-A self ventilated model with the armature connected directly to the crankshaft through a flexible coupling. It is separately excited from an exciter mounted on the main generator and driven by a V-belt from a shaft extension of the generator. Power for battery charging, controls and lighting is furnished by an auxiliary generator mounted on the main generator and driven by V-belts. A fan generator mounted on the main generator shaft provides power for a radiator-fan motor and the two traction-motor blowers. Class B insulation is used on all motors and generators.

Changes for Suburban Use

A number of modifications and additions were made to the all-purpose locomotive to convert it into the suburban design. The two suburban locomotives have a 60:19 gear ratio for a maximum speed of 85 m.p.h. Dual cab controls are installed on the locomotive with the additional station located on the opposite side of the cab from the standard control station. The following features are incorporated at the second station:

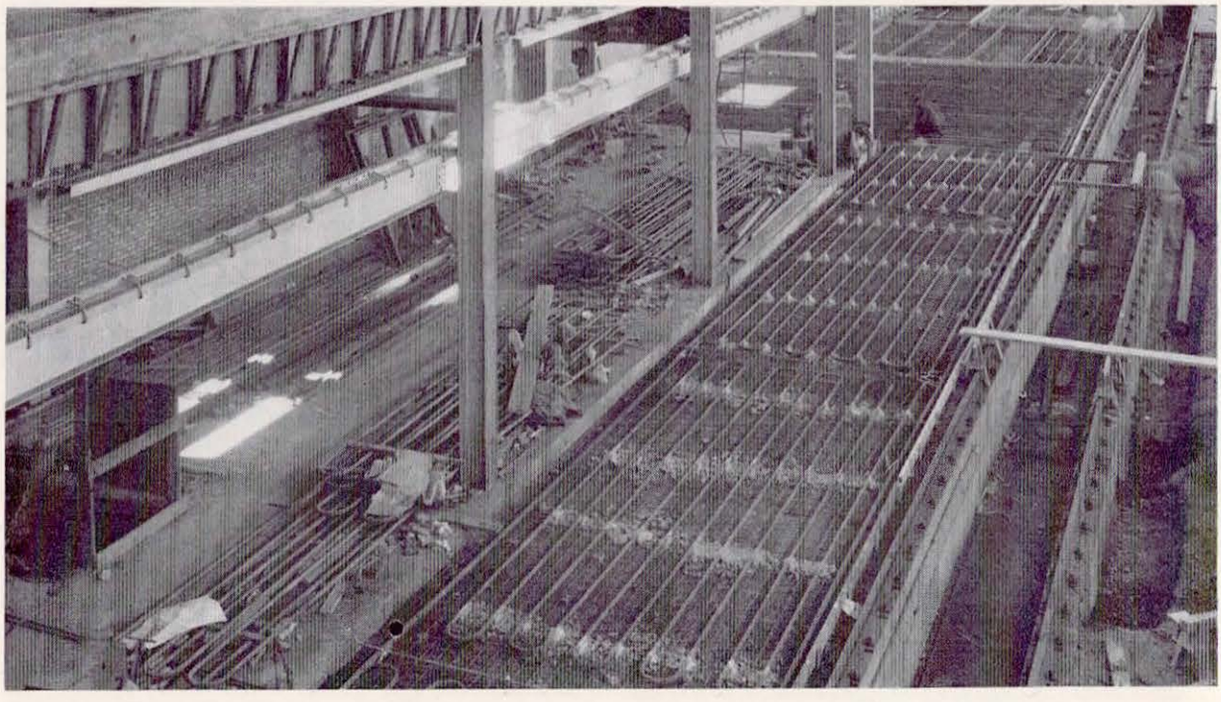
Throttle
Reverser
Sander valve
Bell ringer valve
Independent and automatic brake valve
All air-brake gages
Wheel-slip indicator
Speedometer
Load ammeter
Cab-lights switch
Auxiliary fuel-pump switch
Locomotive run switch
Engine start and stop switches
High-and low-power switches
Switch for front and rear headlights
Number-box lights switch, No. 2 end of unit
Transfer switch for nullifying headlight and locomotive run circuits at the standard control station.

Multiple-unit control is installed and provides for multiple operation in any combination. The locomotives have Association of American Railroads Type H tight-lock couplers with National Malleable rubber draft gear. H.S.C. electro-pneumatic braking is provided as a modification to the standard brake equipment. Each locomotive has an overspeed control to

The new shop, seen here from the west, is designed to serve practically every need of Diesel locomotives, from light servicing to heavy repairs

NORTH WESTERN BUILDS NEW DIESEL SHOP

"Super-service station" constructed at Chicago, at a cost of $1,800,000, introduces many innovations in design and puts repairs and servicing on a "push-button" basis



Wrought iron coils were installed in the floor for the radiant heating system. About five miles of pipe were used for this purpose inside the building and for melting snow outside

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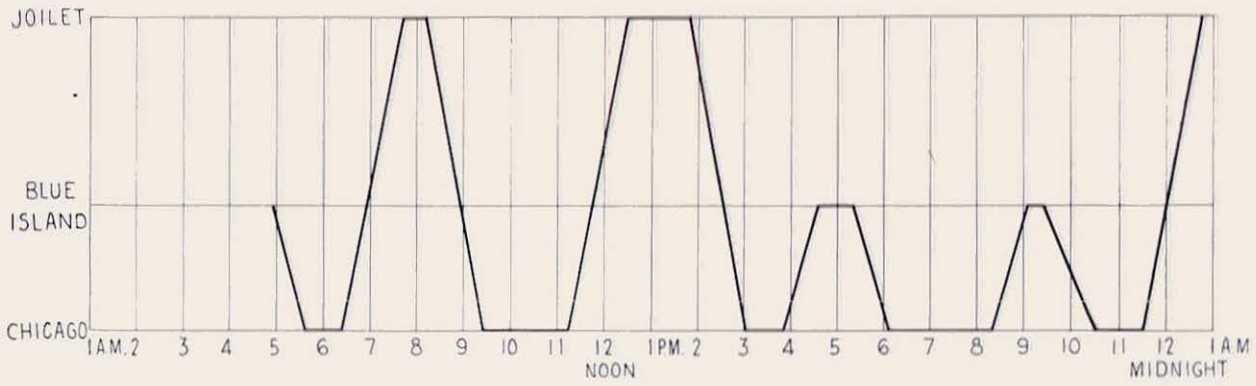


Schedule of locomotive No. 1 on Mondays, Wednesdays and Fridays and of locomotive No. 2 on Tuesdays and Thursdays

limit maximum speed for protection of the traction-motor armatures.

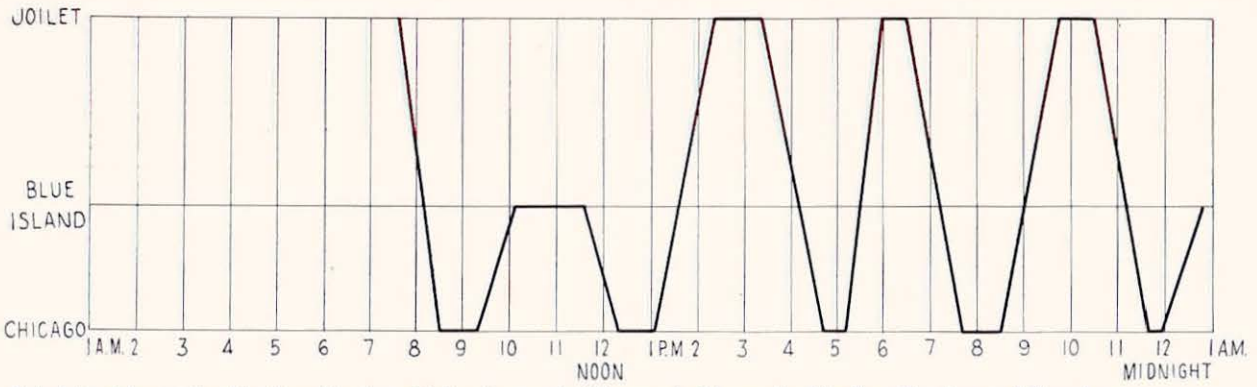
The locomotives are equipped with a Vapor Heating Corporation 1,600-lb. steam generator with remote controls and all necessary equipment for multiple operation of the boiler equipment when two units are used in multiple service. The boiler-water capacity is 1,000 gal.

Other items of equipment on the suburban locomotive include a 750-watt, 64-volt motor generator set for operating the air-brake circuit, cab-signal control equipment with receivers at both ends to pick up cab signal indications for either direction of operation, two electric speedometers, a 12-kw., 70-to-85-volt head-end lighting installation with necessary jumpers and accessories for furnishing train electric power in either single- or double-unit service, a Pyle National terminal lighting receptacle to permit lighting from 100-volt terminal power, a hydrostatic distant-type fuel-level gage in the cab, four pneumatic double windshield wiper blades, Timken roller-bearing heat indicators, and Protectoseal fuel-filler and water-filler connections.

Table I—Partial List of Materials and Equipment on the Rock Island Suburban Locomotives

Main generator; traction motors; auxiliary generator; radiator fan motor; exciter; traction motor blower motors; fan generator; electrical control equipment; load control equipment; start, stop, high- and low-power switches	Westinghouse Electric Corporation, Pittsburgh, Pa.
Air-brake equipment (Electro-pneumatic high-speed 2426*); control throttle and associated equipment (two control stands furnished for operation in either direction*); multiple-unit control equipment*; electric speedometer*; locomotive overspeed control equipment*; air compressor; M. G. set for isolating air-brake circuits*; signal horns	Westinghouse Air Brake Company, Wilmerding, Pa.
Engine governor	Woodward Governor Company, Rockford, Ill.
12 kw., 64-volt, d.c. generator for head-end lighting of existing suburban equipment	Fairbanks, Morse & Co., Chicago
Alarm bell	Graybar Electric Company, New York
Alarm buzzer	Electric Service Mfg. Co., Philadelphia, Pa.
Jumper cables and receptacles*; headlights; marker lights	Pyle-National Company, Chicago
Heating boiler and associated equipment*	Vapor Heating Corporation, Chicago
Tight lock coupler, Type H*	National Malleable & Steel Castings Co., Cleveland, Ohio
Cab signal and control equipment Type E*	Union Switch & Signal Co., Swissvale, Pa.
Control equipment for passenger-car lighting generator*	Safety Car Heating & Lighting Co., New York
Hydrostatic fuel gage*	Manning, Maxwell & Moore, Bridgeport, Conn.
Sanders	Morris B. Brewster Company, Chicago
Hand brake	National Brake Company, New York
Batteries	Gould Storage Battery Company, Depew, N. Y.
Signal bell and clapper	Howard Foundry Company, Chicago
Footboards and steps	Blaw-Knox Company, Pittsburgh, Pa.
Window wipers	C. A. Sprague Devices, Michigan City, Ind.
Sun visors	Fulton Company, Milwaukee, Wis.
Cab heater; radiator shutters	Kysor Heater Company, Cadillac, Mich.
Fire extinguishers	C-O-Two Fire Equipment Co., Newark, N. J.
Draft gear	National Malleable & Steel Castings Co., Cleveland, Ohio
Truck frame	General Steel Castings Corporation, Eddystone, Pa.
Springs	American Steel Foundries, Chicago
Brake rigging	Westinghouse Air Brake Company, Wilmerding, Pa.
Brake shoes	American Brake Shoe Company, New York
Wheels	Edgewater Steel Company, Pittsburgh, Pa.
Journal bearings	Timken Roller Bearing Company, Canton, Ohio
Cab seats	Coach & Car Equipment Co., Chicago
Cab insulation	Johns-Manville, New York
Radiators	Yates-American Machine Company, Beloit, Wis.
Radiator fan	Jeffrey Mfg. Co., Columbus, Ohio
Flexible coupling	Falk Corporation, Milwaukee, Wis.
Auxiliary fuel-oil pump	Geo. D. Roper Corporation, Rockford, Ill.
Doors	Morton Mfg. Co., Chicago
Exhaust snubber assembly	Burgess-Manning Company, Libertyville, Ill.
Lube oil filter	Michiana Products Corporation, Michigan City, Ind.
Lube oil cooler	Ross Heater & Mfg. Co., Buffalo, N. Y.
Air intake filter, engine	Farr Company, Los Angeles, Calif.
Temperature regulator	Fulton Sylphon Company, Knoxville, Tenn.

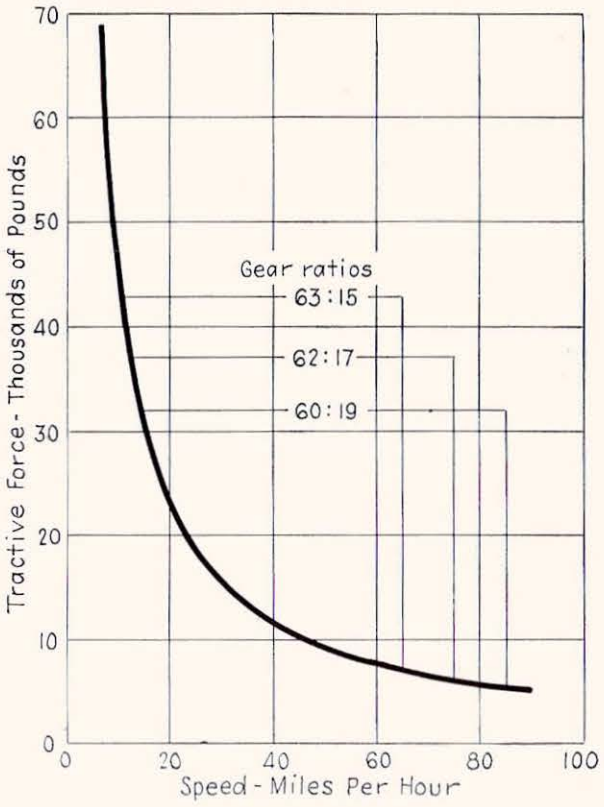
*Not standard on 1,500-hp. all-purpose locomotive



Schedule of locomotive No. 2 on Mondays, Wednesdays and Fridays and of locomotive No. 1 on Tuesdays and Thursdays

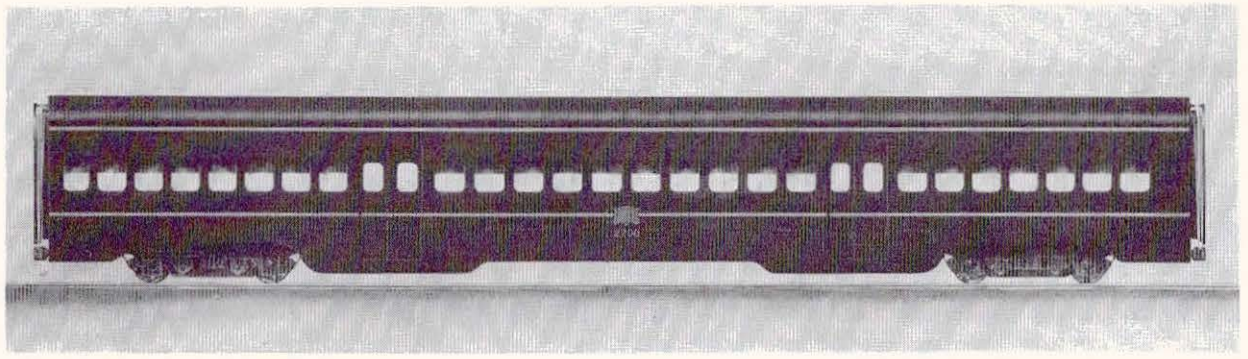
Table II—Principal Weights and Dimensions of the Rock Island 1,500-hp. Suburban Locomotives

Type	0-4-4-0(B-B)
Principal Dimensions:	
Overall length (inside knuckles), ft.—in.	54-0
Overall width, ft.—in.	10-4
Width of power plant compartment, ft.—in.	6-0
Width over radiator compartment, ft.—in.	7-0
Overall height above rail, ft.—in.	14-6
Wheelbase each truck, ft.—in.	9-6
Wheelbase total locomotive, ft.—in.	39-6
Distance between truck centers, ft.—in.	30-0
Weights; lb.:	
Total locomotive in working order (without boiler),	240,000
On drivers	240,000
Weight per axle	60,000
Transmission:	
Driving motors	4
Driving wheels, pairs	4
Diameter wheels, in.	42
Starting tractive force (at 30 per cent adhesion), lb.	72,000
Minimum radius curvature (locomotive alone), ft.	150
Supplies:	
Fuel oil, gal.	900
Lubricating oil, gal.	300
Engine cooling water, gal.	175
Sand, cu. ft.	28
Boiler water, gal.	1,900



Right—The speed-tractive-force curve for the 1,500-hp. Rock Island suburban locomotives

Below—One of 20 lightweight suburban cars on order from the Pullman-Standard Car Manufacturing Company for use with the Diesel suburban locomotives for rehabilitation of the Rock Island's commuter service. The cars will have a seating capacity of 100, interior color treatment in pastel shades, fluorescent lighting, and forced-air ventilation. Exteriors of the cars will be Pullman green with gold speed stripes



HOW THINGS LOOK ON EUROPE'S RAILWAYS

By WILLIAM WHITE
President, Delaware, Lackawanna & Western

Between September 10 and October 27, 1948, Mr. White made a special survey of Western European railroads for the Economic Cooperation Administration. In company with James G. Lyne, co-editor of *Railway Age*, he has prepared a special account—which does not, of course, constitute an official report—of his observations for publication in the December, 1948, proceedings of the New York Railroad Club. This article consists of excerpts from that account.

Conditions on the railways of western Europe are not hopelessly bad. Industrial production is not being retarded by inadequacy of railroad transportation, except in the Anglo-American area ("Bizone") and the French zone of western Germany, where only 85 per cent and 70 per cent, respectively, of the demand for freight cars is being met. Generally speaking, there is no shortage of locomotives—in the number on hand—but the percentage in unserviceable condition is high. Western Europe could use an enormous quantity of new railroad equipment—from the standpoint of economical operation—but from the aspect of getting available traffic moved, a much smaller quantity will be needed.

The Economic Cooperation Administration is an all-American organization. It has as its opposite number the "Organization for European Cooperation," composed of representatives of countries which are candidates to receive assistance under the Marshall Plan. This O.E.C. also had its headquarters in Paris, and its transport group had prepared a list of the railway materials and equipment which, in its opinion, would be required for the rehabilitation of the railways of western Europe. It was my primary job to go over the list and examine, as far as time would permit, the condition of the railways in the light of these requirements and to assess their order of urgency.

The Freight Car Situation

Car shortages are not actually slowing up production anywhere in Europe except in the Bizone and the French zone of Germany. There is, however, practically no surplus of cars anywhere, and a rapid increase in industrial production would probably give rise to shortages in France, western Germany, Italy and the Netherlands.

In France there are approximately 375,000 freight cars, but 18 per cent are unserviceable. Nevertheless, French railways are handling 40 per cent more ton-miles than prewar by effecting a large increase—25 per cent—in average tons per car; by a reduction from 11.5 days to 7.8 days in average turn-around time; by a rise from 125 to 157 in the average mileage per loaded car, and by a decline in the ratio of empty to total miles from more than 27 per cent to less than 25 per cent.

The French, in my opinion, should be comparatively well fixed, with the 35,000 new cars they now have on order, if they can reduce their unserviceable ratio from the present 18 per cent to, say, 10 per cent. Quite likely, a reduction below that point would be questionable because it would probably involve repairing a lot of over-age cars. Approximately one-third of all French freight cars are over 35 years of age.

Orders for a little over 10,000 new cars a year would enable the French railways to prevent the ratio of cars over 35 years of age from increasing; and 15,000 new cars a year would permit them gradually to reduce the ratio of superannuated equipment. These car ages seem pretty extended, but with the comparatively light loads they handle, many European countries consider the serviceable life of a properly maintained freight car to be from 40 to 50 years.

There is a serious car shortage in the Bizone. Leaving out of account tank cars, of which there is a surplus, there are about one-third fewer freight cars in the Bizone today than in the prewar days, and 28 per cent are unserviceable. Moreover, unlike France, all the utilization factors in the Bizone except average tons per car are less favorable than in the prewar period. Cars over 35 years old constitute about one-third of the total supply. With all the Bizone's handicaps it is still going to produce almost half as many net ton-miles this year as all of France—with industrial production in the zone estimated at only 68 per cent of "normal." In my opinion, improving the freight car situation in the Bizone is the number one railway transportation problem of western Europe.

Freight car construction has been started in the Bizone—the first car of an order for 3,000 having been completed in September. The Bizone authorities have ordered cars from several other European countries and there is a good chance that, combined with its own production, this zone may have over 30,000 more cars next fall than it has now—but to handle "normal" traffic satisfactorily, this zone could use 100,000 more cars than it now has, even with the unserviceable ratio reduced from the present 28 per cent to 10 per cent. This is, obviously, a situation which can hardly be completely remedied during the period for which American aid is in prospect.

The car shortage in the French zone of Germany is relatively, the worst in Western Europe—but the area is industrially of considerably less importance than the Bizone. French authorities are building 1,250 cars in the zone at Mainz and orders for an additional 3,500 cars from other countries are contemplated. The zone could make use of at least 10,000 more cars than those now actually or prospectively on order.

Adequate Locomotive Supply

The French zone is the one place in the West of Europe where there is a shortage of locomotives—of which, possibly, some might be obtainable by loan or purchase from France, where, according to my information, there is a surplus of several hundred serviceable locomotives. Greece is in great need of 50 locomotives and these might also be obtainable from France.

Both the Bizone and the French zone are also confronted by a serious problem of locomotive repair —the French zone having no shops suitable for heavy repairs. In the Bizone, however, locomotive repairs are progressing at a rate to provide motive power safely in excess of traffic, limited as it is by the supply of freight cars. It did not appear to me that locomotives in Europe are being given the tonnage they could easily manage. In my two weeks in Germany I did not hear a single locomotive really working near its capacity.

The French railways got busy right away when the Nazis were driven out, on a program of acquiring new locomotives and repairing the old ones, and this policy has paid off handsomely, as is testified by the fact that these railways are today handling 25 per cent more ton-mileage than they moved before the war.

Passenger Cars and Track

The passenger car situation is deplorable everywhere; in Italy it is reported to be so bad that 3,000 freight cars are regularly assigned to carry passengers. But first things have to come first, and remedying the freight car situation must obviously take precedence over passenger cars, as long as such a shortage exists in so many places and for so many people in the ordinary necessities for living at the minimum level of decent comfort.

Roadway and track in western Europe, while not generally in number one condition, are in most places not in deplorable shape. Rail and tie renewals have been largely suspended since the beginning of the war and, as I see it, the first step is to get the annual renewals back to the prewar level, so that deterioration will not go any further than it has already. For western Europe as a whole, some 700 to 800 thousand tons of rail (excluding fastenings) annually will do the job, and about 21 million wooden ties. These totals do not seem to be beyond the capacity of western Europe to supply. A lot of European track is laid on steel ties which also represent a renewal problem, which I was unable to get into very far.

The European railways could do a lot in stretching out the useful life of their rails if they would adopt the American practice of building up rail-ends by welding, and if they would do a more thorough job of tamping ballast under joint ties. A visit to America by some open-minded track-maintenance officers from Europe should prove enlightening and profitable.

It was an honor and a privilege for me to have been able to contribute in a small way, by giving what advice I could to help maximize the effectiveness of the large and magnanimous expenditure in aid of Europe to which our nation is committed. Vastly greater contributions than mine are being made by other American business executives, who have given up generous incomes in industry and finance to take up onerous duties for comparatively nominal salaries abroad, in their country's service. These men will never boast of their patriotic sacrifices—but those of us at home should do some boasting, and boosting for them. Where else, outside business, can be found so many men who, as volunteers, are willing to put forth such exertions—with the certainty of plenteous blame if they fail, and scant hope for gratitude if they succeed? If the Marshall Plan succeeds, as all of us hope it will, in promoting the recovery of western Europe and halting the spread of Communism, it will be the American business men who are devoting their experienced talents to the management of the job who will be largely responsible for its success.

Conditions Not Desperate

After all the pictures we Americans saw of wartime bombing of the European railways and all the sensational reports we have heard about the chaotic conditions obtaining on the Continent, an actual look at the situation on the ground is encouraging rather than the contrary. Conditions there, while demanding the utmost in hard work, courage and persistence that people are capable of, are not desperate; and I did not get the impression that European railroad men consider them so.

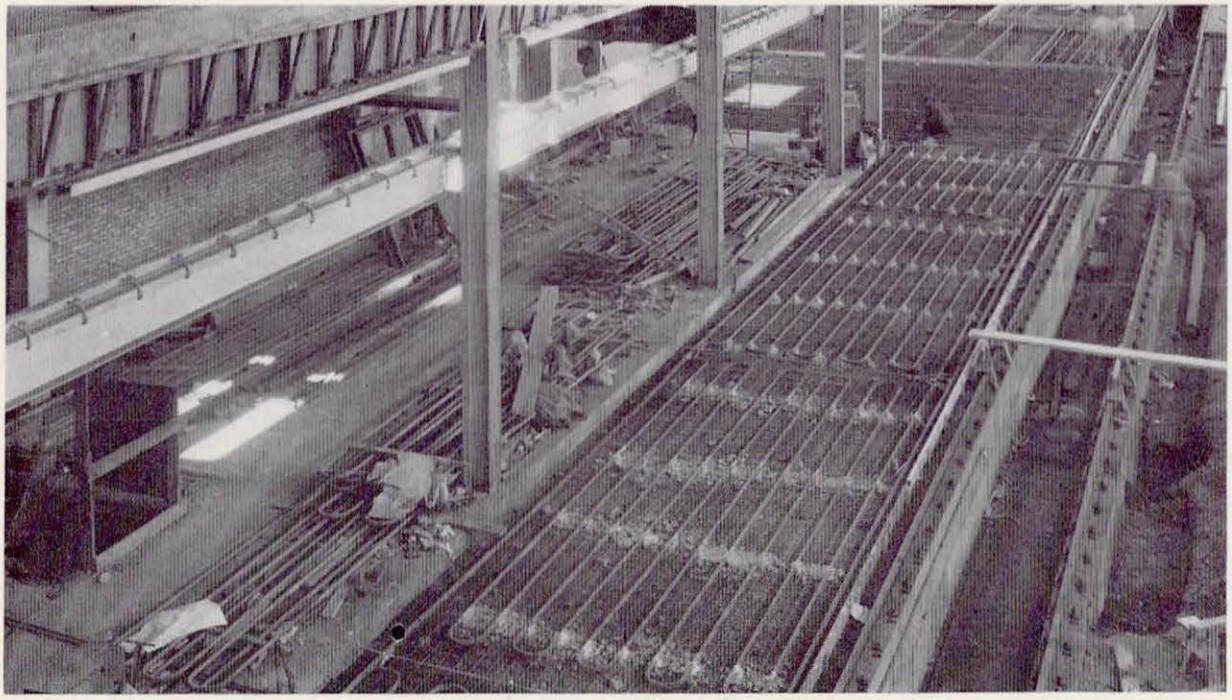
I do not believe that any considerable volume of materials or equipment which are scarce in America are needed or are being sought for the restoration of the European railways to the capacity required of them, so that they may help rather hinder industrial production. Some of them, no doubt, do need financial assistance, available only from this side of the Atlantic—but this is a question upon which I refrain from expressing an opinion, because my assignment did not cover this phase of the problem and I have given it no special study.

The railway aspects of the European recovery program need more study than I was able to give them in the time at my disposal, and railway conditions will need to be observed by a practiced eye as the recovery program goes forward. I have recommeneded to the E.C.A. people that they secure the services of an American railroad man competent to do this continuing job of study and observation, and am pleased to be able to report that my advice has been accepted and that a capable man for this assignment has been selected.

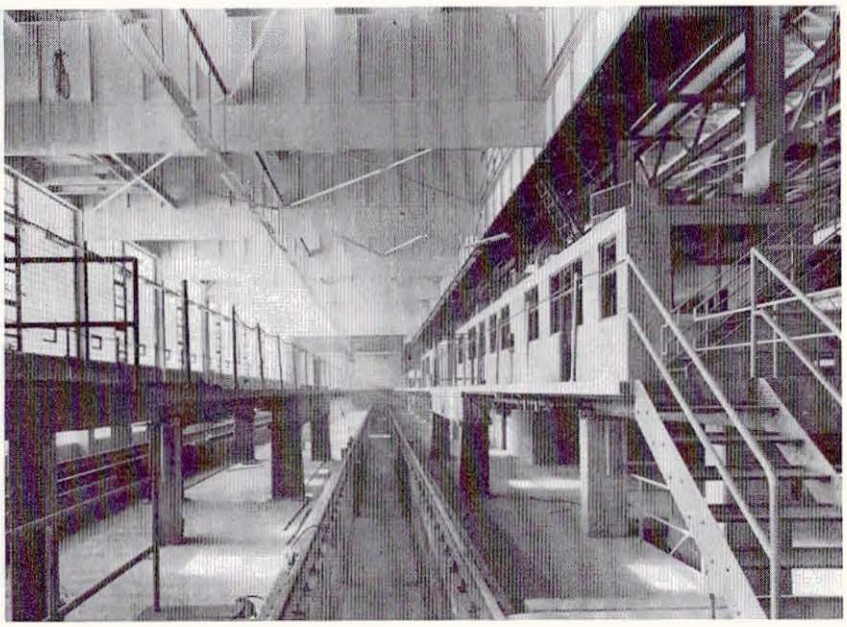
The new shop, seen here from the west, is designed to serve practically every need of Diesel locomotives, from light servicing to heavy repairs

NORTH WESTERN BUILDS NEW DIESEL SHOP

"Super-service station" constructed at Chicago, at a cost of $1,800,000, introduces many innovations in design and puts repairs and servicing on a "push-button" basis



Wrought iron coils were installed in the floor for the radiant heating system. About five miles of pipe were used for this purpose inside the building and for melting snow outside

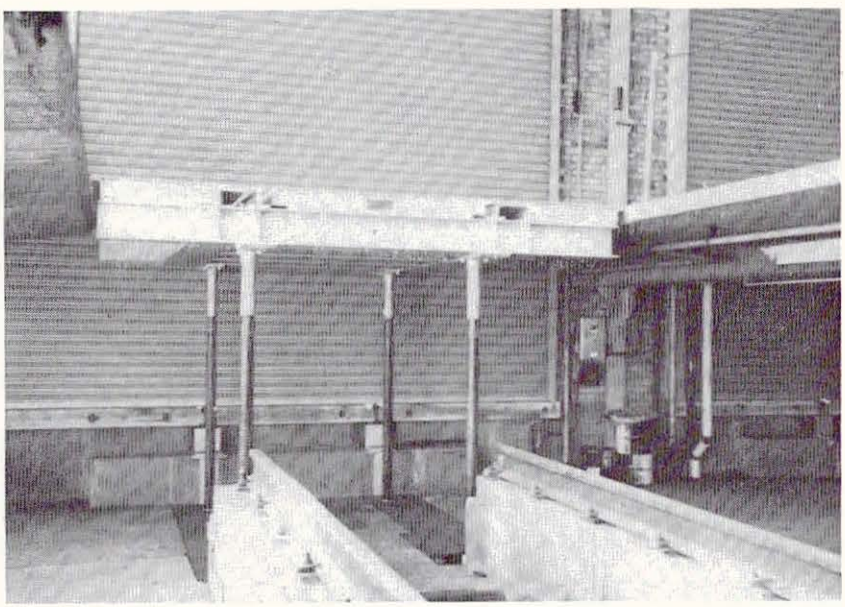


Looking west along one of the service tracks one sees the continuous pit sections through the drop-table tops (middle foreground), the effect of the cantilever design for the service platforms in reducing obstructions at the depressed level, and the use of overhead baffle plates in the ventilating system

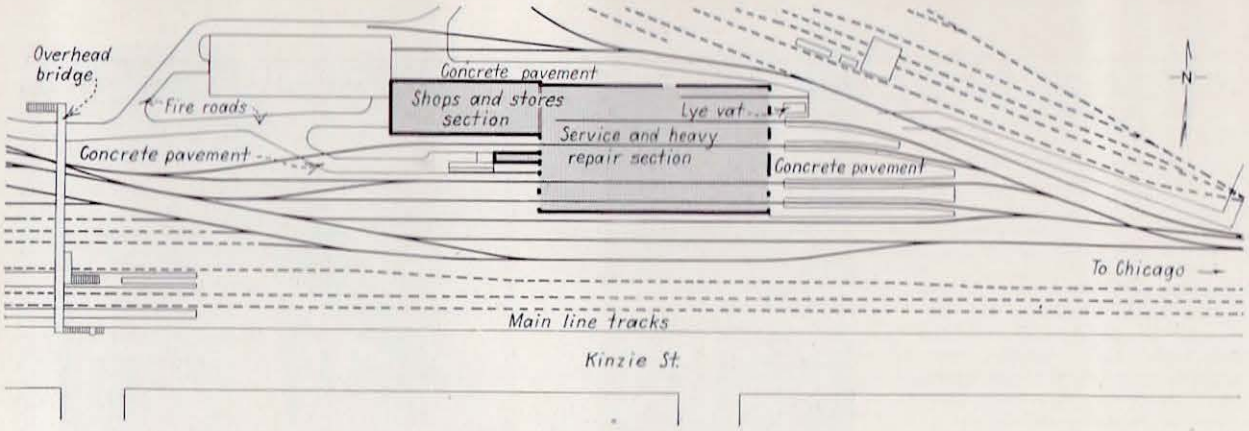
Everything that has been learned up to now about Diesel maintenance and repair shops, plus some entirely new ideas for getting maximum efficiency, went into the design of a shop just completed on the Chicago & North Western at Chicago, at a cost of approximately $1,800,000. Radiant heating for *outside* concrete ramps and platforms as well as inside the shop, cantilever working platforms to minimize obstructions at the lower level, practically continuous areas of glass blocks and steel sash in the side walls, a system of overhead baffles and roof ventilators for disposing of exhaust fumes, a roving sanding plant, and some important innovations in the facilities for changing out, handling and storing traction trucks and wheels—these are a few of the advanced features found in this new shop.

From Servicing to Heavy Repairs

Located adjacent to the North Western's existing steam locomotive repair shops at Kinzie and Keeler streets, the new shop is designed to handle a full range of repairs to Diesel locomotives, from light servicing to complete renewal of major locomotive assemblies. It is equipped to service nine locomotive units at one time, releasing them for road service in a few hours. Simultaneously it can handle three additional units



One of the two-level crossover bridges. To allow passage of a locomotive the bridge is lowered to rest on supports at the track level



As shown on this general layout plan, the shop is of the through type, permitting entry and exit of locomotives at either end

undergoing more extensive repairs. Discussing the new shop, R. L. Williams, president of the North Western, said, "We have drawn upon the available knowledge in the Diesel field—but a large part of the planning involved is without precedent and without the benefit of experience. Our engineers set out to develop a complete Diesel service and repair plant under one roof, and the result, to our knowledge, is the very last word in the industry."

The portion of the new shop used primarily for servicing is of the through type, designed to permit entry and exit of locomotives at either end. Of concrete, brick and steel construction the building is supported on piles consisting of Raymond steel shells filled with concrete. The roof consists of concrete slabs (mostly precast), 1 in. of insulation, and 5-ply built-up roof, topped with tar-and-gravel roofing. The design and construction of the shop were based on the use of modular sizes of construction units, in which a construction module of four inches is used for brick, sash and other construction materials, thereby permitting coordination of masonry with factory-fabricated components and eliminating needless waste and expensive field cutting and fitting.

Three Tracks for Servicing

This shop has two principal components. One, the service and heavy repair section, is 140 ft. wide and 250 ft. long, with the latter dimension extending in an east-west direction. Adjoining this main portion of the structure at its west end is the shops and stores section, which houses some of the auxiliary shop facilities and affords space for the use of the stores department. This portion of the structure is 49 ft. by 155 ft. in plan.

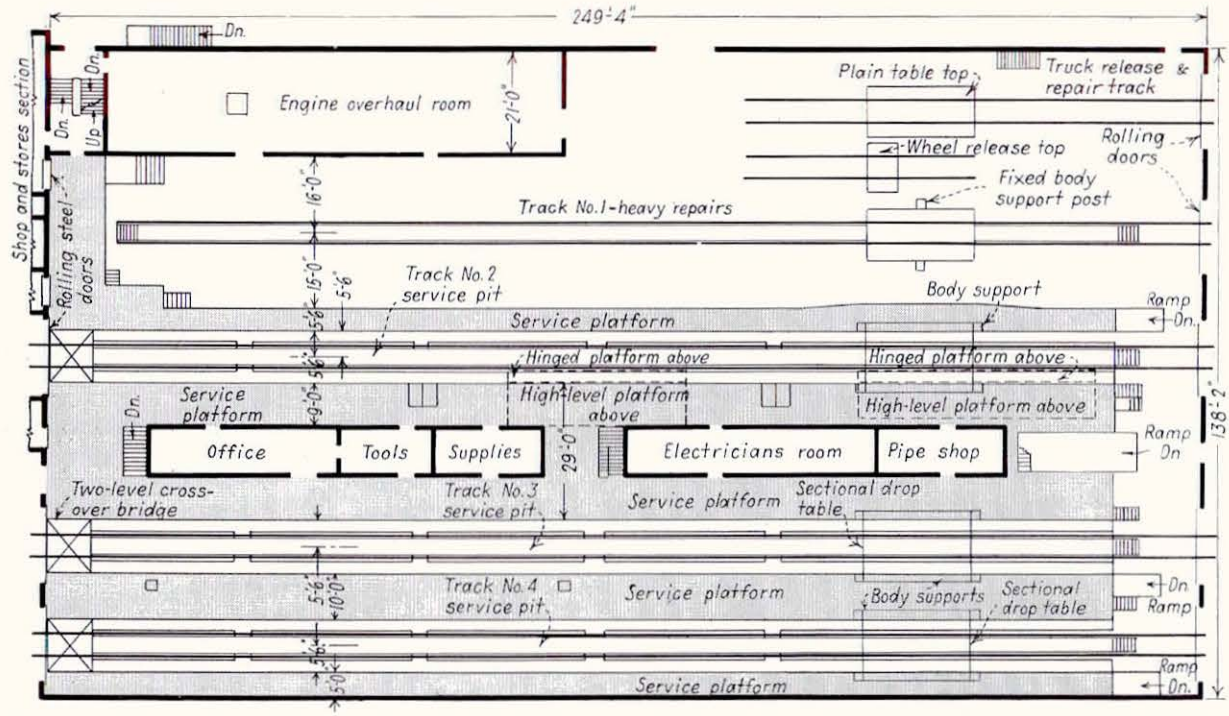
The service and heavy repair section is divided longitudinally into a low bay, containing two service tracks, and a high bay, containing one combination servicing and repair track and a stub-end track, primarily for heavy repairs. The two service tracks and the combination track extend entirely through the building and have full-length inspection pits. They are served by depressed and locomotive-floor-level working areas, and, in addition, the combination track in the high bay has a partial-length working platform at the roof level. This platform has a hinged section which, when lowered to the horizontal position permits workmen to walk directly onto the roofs of locomotives.

The locomotive-floor-level platforms are of cast-in-place concrete, and are constructed to a cantilever design, with the edges overhanging the supporting columns as much as 7 ft. 6 in., affording a maximum of unobstructed working area alongside the tracks at the depressed floor level. The edges of all service platforms adjacent to tracks are protected by hand railings of removable pipe posts connected with detachable metal chains. One of the service platforms at locomotive-floor-level has a width of 29 ft., and on this platform is a row of enclosed rooms, providing space for an office, a tool room, a supply room, an electrician's room, and a pipe shop. Underneath this platform, at the depressed level, are other rooms for similar purposes.

To permit workmen to pass freely to and from the engine pits, openings in the walls of the pits are provided at convenient intervals. The pit rails, of new 112-lb. rail, are butt-welded into continuous lengths, employing the Oxweld pressure-welding process, and the steel plates on which these rails are supported are separated from the tops of the pit walls by composition pads.

Unusual Crossover Bridges

At the west end of the main building, which is the end adjacent to the stores section, there is a Whiting two-level crossover bridge at the location of each of the through tracks. Each of these bridges consists of a platform, incorporating a short length of track, which is raised and lowered from below by four vertical shafts actuated by a motor. Normally these bridges are in the raised position, level with the service platforms at locomotive-floor height, for free movement at that level for workmen and trucking vehicles. When the bridges are in this position there is also complete freedom of movement in the transverse direction at the depressed

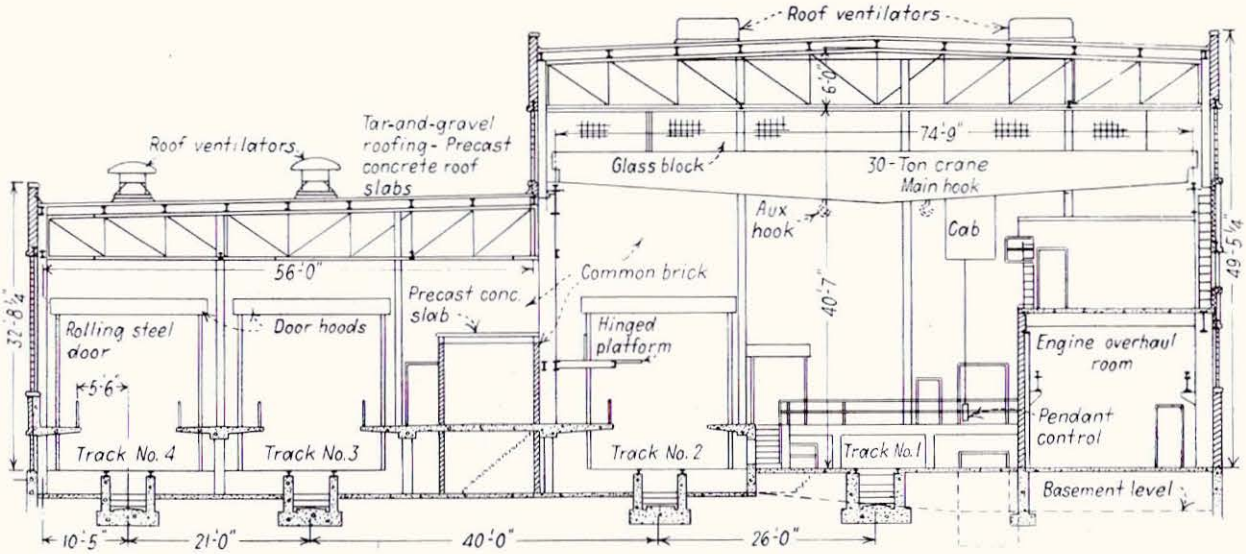


Floor plan of the service and heavy repair section. Shaded areas are platforms at locomotive floor level

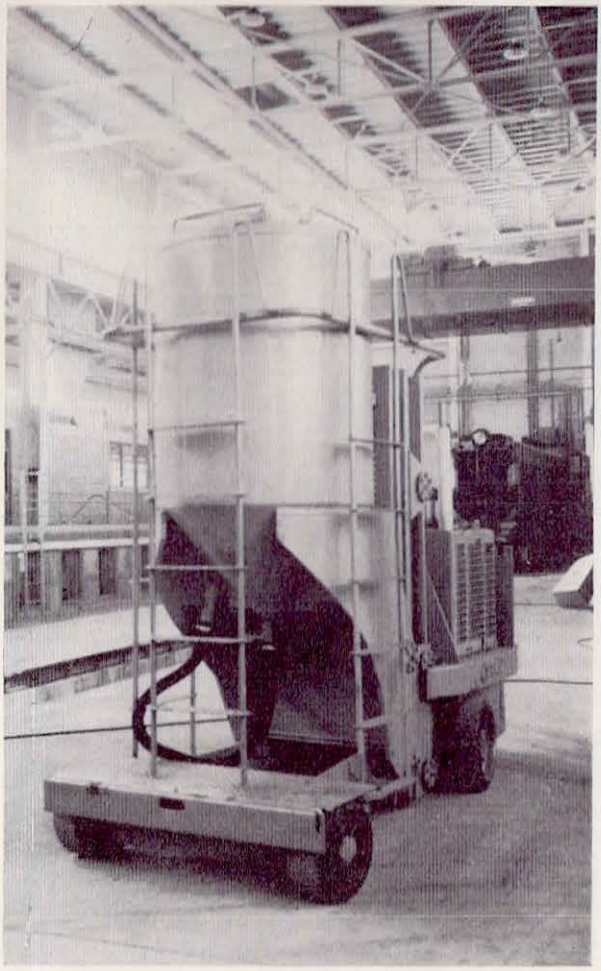
level. When a locomotive is moved into or out of the building at the west end, the crossover bridge on the particular track is lowered until the rails on the platform coincide with the pit rails, in which position the bridge is supported on steel bearing shoes at the corners. Movements of the bridges are controlled by push buttons and limit switches.

In the design of the repair shop, nothing was overlooked in attaining the desired goal—speed and economy in handling locomotives, with maximum safety and convenience for employees. The engine doors, 16 ft. wide by 17 ft. high, are of the Cornell steel overhead rolling type, motor-driven and operated by push buttons. The side walls of the shop are practically continuous areas of glass, either in the form of glass blocks or of projected steel sash for ventilation.

Exhaust fumes from locomotives spotted in the low bay are confined in overhead pockets formed by trans-



Cross-section through the service and heavy-repair section, looking west



The portable sand plant consists of a storage tank mounted on a standard high-lift truck

verse and longitudinal baffles of Transite, and are then drawn off by power-driven roof ventilators. General lighting in this section is fluorescent, including longitudinal rows of fixtures overhead as well as underneath the locomotive-floor-level platforms. Heating in this area, as well as most other portions of the shop, is of the radiant type, embodying wrought iron pipe coils embedded in the concrete floors. This system is supplemented by unit heaters where necessary. Including the radiant heating piping installed outside the shop, a total of five miles of wrought iron pipe was used for this purpose.

Special care was taken in designing and locating outlets for steam, water, compressed air and electricity along the edges of the service platforms to insure maximum convenience for workmen in servicing locomotives. For delivering fresh lubricating oil to locomotives Bowser hose-reel and meter units are spaced at convenient intervals on the service platforms. Used lubricant is drained off by gravity and delivered to sumps at the outer end of an extension to the building between tracks at the west end. There are two sumps for this purpose so that one may be cleaned while the other is in use. A 50-gal. per min. pump delivers oil from the sumps to portable tanks, in which it is taken to an existing oil reclamation plant in the shop area.

The extension at the west end houses a storage room for special oils and greases at the level of the service platforms, and a battery room at the depressed level. This extension is served by an outside unloading platform, with concrete ramps connecting with the ground level and thence with the depressed level. For melting snow and ice the unloading platform and the ramps have radiant heating systems.

All tracks in the shop are served by a Whiting drop-table hoist which is unusual in a number of respects. One is that the table tops have depressed floors 4 ft. deep between the rails and 2 ft. 6 in. deep outside, so that the engine pits are continuous through them. All the table tops at the service tracks are sectional to permit either a complete truck or a single pair of wheels to be dropped, as desired. At the truck-release point in the heavy-repair area the opening to the drop-table pit is covered with a platform, flush with the surrounding floor, which is designed to raise automatically when a truck is being raised for release by the drop-table hoist. When the hoist is lowered the platform returns to its normal position, providing a continuous unobstructed floor area over which workmen may move at will. The drop-table hoist is operated by a push-button control, and three indicator boards are provided at different locations, on each of which colored lights reveal the exact location of the hoist at any given time.

Another unusual feature of the drop-table pit is the subterranean storage areas for trucks built into the side walls of the pit. After repairs are made, traction trucks are handled to these storage areas on the release-track table top and are held until needed. Immediately outside the shop at the east end, and served by the truck release and repair track, is a large lye vat. For dipping parts and assemblies into the vat a 10-ton traveling crane is provided.

Spanning the width of the high bay (74 ft. 9 in.), and operating on runways extending its entire length, is a Whiting 30-ton crane with a 5-ton auxiliary hoist. The crane has an operator's cab, but operation from the floor is possible by means of a pendant push-button control.

The overhauling of engines is done in a completely enclosed room in a corner of the high bay. The concrete roof of this room is designed to carry a load of 500 lb. per sq. ft., so that it may be used as storage space for generators and other heavy parts. Facilities inside the engine overhaul room include a 5-ton P & H overhead crane, with pendant push-button control, which operates on runways extending the full length of the room. The air in this room is filtered to eliminate dust when reassembling engines.

Heated Fueling Platform

Immediately outside the shop building at the east end is a concrete fueling platform at top-of-rail level, with the concrete covering all the areas between the shop tracks and extending a distance of about 200 ft. from the end of the building. This platform is kept free of snow and ice by a radiant-heating system. Fuel oil can be delivered simultaneously to three coupled units on any of these tracks. For metering fuel oil as it is de-

livered to locomotives, two Bowser meters are provided.

An overhead sand storage tank at the east end has a hose on one side to sand Diesel switchers and a hose on the platform side for delivering sand to a specially-designed portable sand plant for road locomotives. This latter unit consists of a standard Yale high-lift truck on which is mounted a vertical cylindrical sand-storage tank having a capacity of about 40 cu. ft. It has a cone-shaped bottom fitted with a sand-delivery hose. To sand a locomotive the storage tank is raised to the elevated position, permitting delivery of sand by gravity flow.

For the rapid transmission of instructions a communication system is provided throughout the shop, with the control station located in the foremen's office. This system incorporates paging speakers and talk-back stations at various points inside the building and in the immediate vicinity outside.

For fire protection, supplementing the fireproof construction of the building, a variety of equipment is provided in the service and heavy repair section, including fog throwers, hose reels with conventional nozzles, and hand fire extinguishers.

The shops and stores section of the new building has three levels, the lower of which, a half basement, is connected by a ramp with the depressed level in the service section of the main building. This lower level is devoted entirely to the storage of repair parts. The main floor of the shop and stores section is at the same elevation as the locomotive-floor-level working areas in the main structure. It contains office space for the stores personnel, a store room, a room for cleaning filters and parts, a parts reconditioning room, and a sound-proofed room, provided with filtered air, for overhauling precision parts, such as injectors and governors. Connecting doors between the shops and stores section and the service and heavy repair section are fitted with Cornell overhead steel rolling fire doors.

Equipment in the parts reconditioning room includes three overhead crane systems, each having two 1,000-lb. P & H hoists. In the filter and parts cleaning room there is a two-ton P & H overhead crane. Other equipment in this room includes a Farr filter cleaner, a Farr filter oiler with a Yale motor-driven chain hoist overhead, and two dip tanks with a drain area in between.

The entire third floor of the shops and stores section is devoted to facilities for employees of modern and pleasing appearance. These consist of a locker and wash room, a lunch room, and separate rooms for toilets and showers. The shower room has six showers in separate stalls with tile partitions. At each stall there is a small dressing room with metal partitions and door. In the shower, toilet and lunch rooms, the walls are of natural color glazed tile. The lunch room has wood tables and benches specially designed and built for this location. In the wash rooms are batteries of steel lockers and three Bradley washfountains.

To give access to the shop a considerable amount of new trackage was constructed of 112-lb. material. This work involved the installation of about 40 Racor Model 22 switch stands.

Fuel and lubricant are furnished from storage and pumping facilities located several hundred feet north of the shop building. These include a 150,000-gal. fuel-oil storage tank and an oil unloading rack with capacity for five cars at a time. The oil is pumped from the storage tanks to the delivery outlets by two 100-gal. per min. pumps arranged in parallel. A brick building houses these pumps, together with filters, a pressure tank and pumps for lubricating oil.

All work in connection with this project was carried out under the general supervision of E. C. Vandenburgh, chief engineer of the North Western, and under the direct supervision of B. R. Meyers, assistant chief engineer. The plans and specifications were prepared by De Leuw Cather & Co., Chicago, under the supervision of the road's engineering department, and in close cooperation with its mechanical department, headed by G. W. Bohannon as chief mechanical officer. The general contractor on the project was the S. N. Nielson Company, Chicago.

Partial List of Products and Their Suppliers, C. & N.W. Diesel Shop, Chicago

Acoustical ceiling tile in injector and governor room	National Gypsum Company, Buffalo, N. Y.
Asbestos-cement baffle plates in exhaust system	Johns-Manville Sales Corporation, New York
Controls for radiant heating system	Minneapolis-Honeywell Regulator Company, Minneapolis, Minn.
Drop tables and hoist	Whiting Corporation, Whiting, Ind.
Elevated sand tank	Ross & White Co., Chicago
Filter cleaner and filter oiler	Farr Company, Los Angeles, Cal.
Fluorescent lighting fixtures	Day-Brite Lighting, Inc., St. Louis, Mo.
Fog nozzles	Bowser, Inc., Ft. Wayne, Ind.
Glass blocks	Owens-Illinois Glass Company, Toledo, Ohio
Lavatories and toilet fixtures	Kohler Company, Kohler, Wis.
Meters and filters for lubricant and fuel oil	Bowser, Inc.
Overhead cranes in parts reconditioning room, filter and parts cleaning room, and engine overhaul room	Harnischfeger Corporation, Milwaukee, Wis.
Pads under tie plates of pit rails	Fabreeka Products Company, Boston, Mass.
Precast concrete roof slabs	Federal Cement Tile Company, Chicago
Projected steel sash and mullions	Hope Windows, Inc., Jamestown, N. Y.
Roof ventilators in heavy repair section	Swartwout Company, Cleveland, Ohio
Roof ventilators in service section	Arex Company, Chicago
Roofing insulation and materials	Johns-Manville Sales Corporation
Sand tank on truck	Yale & Towne Manufacturing Co., Philadelphia, Pa.
Steel overhead rolling engine doors	Cornell Rolling Door Works, Long Island City, N. Y.
Steel overhead rolling fire doors	Cornell Rolling Door Works
Steel shells for concrete piles	Raymond Concrete Pile Company, New York
Structural steel	Bethlehem Steel Company, Bethlehem, Pa.
Switch stands and special trackwork	Ramapo-Ajax division, American Brake Shoe Company, Chicago
Thirty-ton traveling crane and auxiliary crane in heavy repair section	Whiting Corporation
Toilet partitions and stalls	Sanymetal Products Company, Cleveland, Ohio
Two-level crossover bridges	Whiting Corporation
Unit heaters	Trane Company, La Crosse, Wis.
Washfountains in locker room	Bradley Washfountain Company, Milwaukee, Wis.
Wrought iron piping for radiant heating system	A. M. Byers Company, Pittsburgh, Pa.

Mr. Graham Takes a Tour

Charles J. Graham

Charles J. Graham, president of the Pittsburgh & West Virginia, has undertaken an unprecedented job for the head of a railroad. It is his avowed aim to make personal contact with practically every one of his railroad's carload shippers — numbering between 3,500 and 5,000 — which task, when completed, will have taken him on a series of tours totalling more than 50,000 mi. Since the P. & W. V. is primarily a short bridge carrier of relatively long-haul traffic—only about 40 per cent of its tonnage originates on line—the majority of its customers are located off-line, many of them at distant points. It is the latter with whom personal contact is rarest—therefore most desirable—and Mr. Graham has found a way to overcome the obstacle of time and geography so that not a single shipper need be slighted. Indeed, he has obeyed the old copy-book maxim by doing the hardest thing first; he has already visited his customers in the Pacific coast, Central West and Southwest areas.

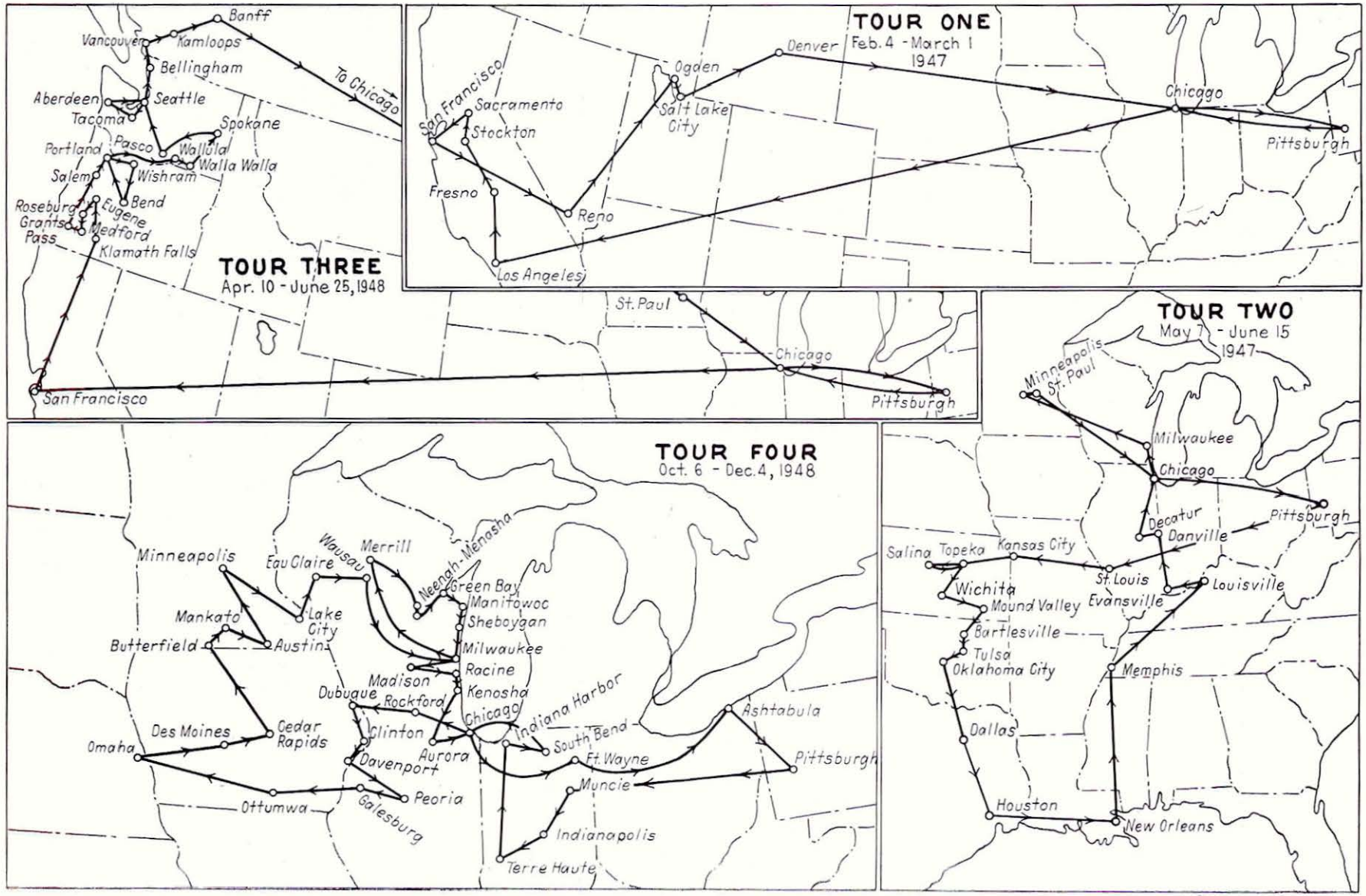
The P. & W. V. chief, before he entered railroading 10 years ago, was an executive of a bolt and nut manufacturing firm and later a vice-president of the Pressed Steel Car Company, in which business he learned the value of "personal trade promotion." Pondering the needs of his railroad in the postwar future, he seized upon the idea of trade promotion on a hitherto unprecedented scale; if it worked in industry, why not in transportation?

The goal was clear. He must call on the customers in their own localities. But the physical problem of reaching thousands of plants in small towns stretching from coast to coast seemed insuperable. Furthermore, he had to stick to his job of directing the railroad at the same time.

The solution was found in the "Westmoreland," private car presented to Mr. Graham in 1941 for his personal use. The car, which is under lease to the railroad, and designated as P. & W. V. Business Car No. 300, suggested itself as the perfect home-and-office-on wheels—superior to, and cheaper than, hotels. Here the P. & W. V. president would do his traveling, his executive work, his visiting and his sleeping.

The technique of the personal contact tour is simple. Perusal of the list of the P. & W. V.'s carload shippers suggests the points at which stops will be convenient to the maximum number of shippers. General and commercial agents of the road's nine off-line traffic offices, when apprised of the tour itinerary, send out r.s.v.p. letter invitations to the road's shippers inviting them to luncheon or dinner, and specifying the time and place. In general, the customers are invited by the P. & W. V. man who customarily calls on them.

Since the "Westmoreland" accommodates only 10 at a meal sitting, it is not feasible to use it for meetings with shippers in large cities like Chicago and New York. At such points Mr. Graham abandons



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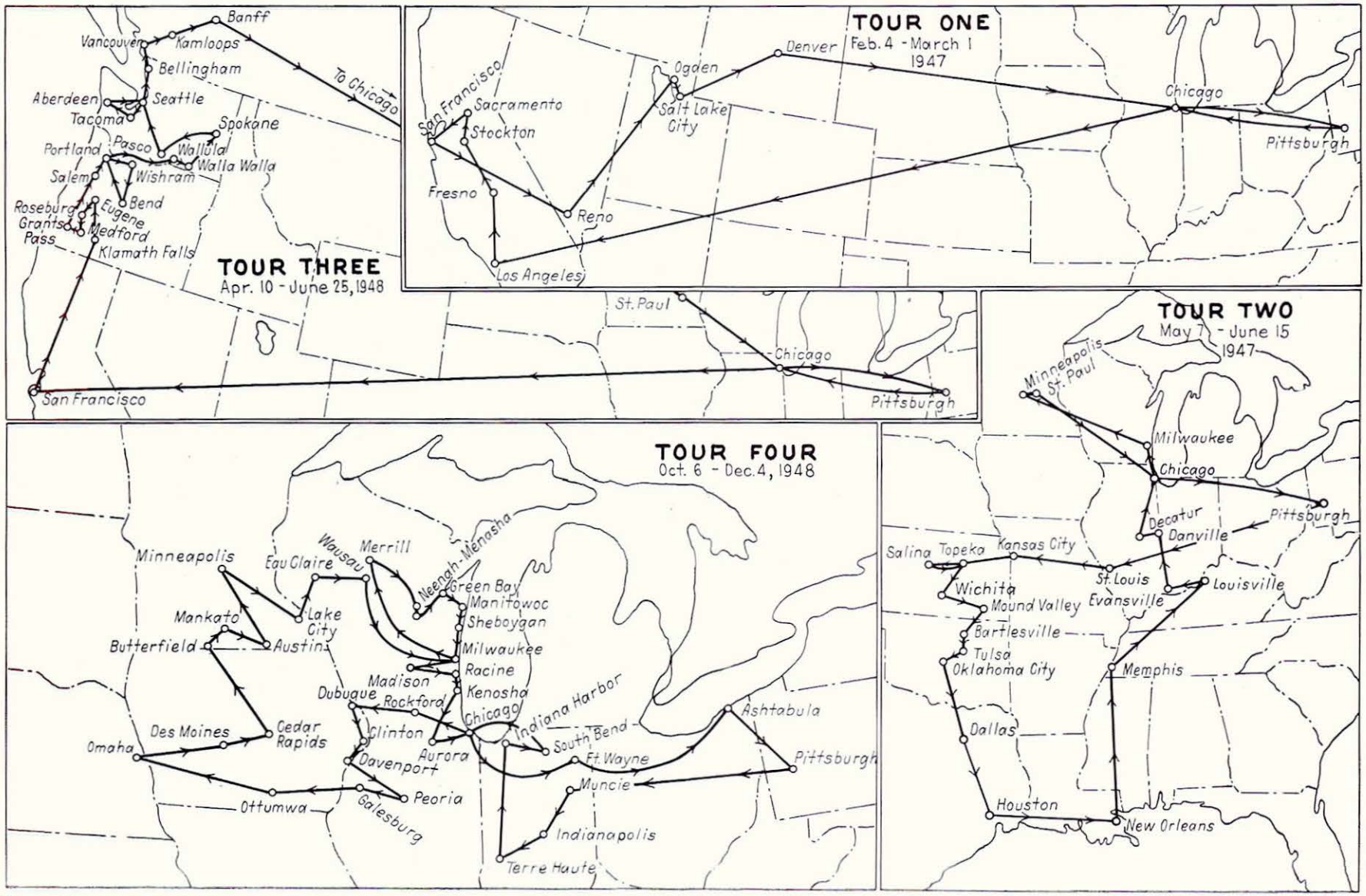
"Looking at ourselves in the mirror," the Pressed Steel Car Officer concluded, "neither the railroads nor the car builders can be proud of their accomplishments in delivering better, high-speed transportation to the freight-using public. Railroad cars today are still Model T's. We are trying to meet 1950 competitive conditions with freight cars little different from those of decades past. With all of the new developments of recent years in mechanical design, in tools and new materials, the freight car remains virtually untouched. And, in the meantime, the truck, the bus and the airplane are cutting into railroad revenues and, thus, into the future prosperity of the car building industry. We of the car building industry cannot avoid taking some of the responsibility with this situation because there must be new and better types of freight cars that research can bring to the fore. For example, a better car will carry freight more safely. The Class I railroads' bill for damage to lading in 1947 was nearly $122,000,000.

"The big job ahead is for the car-builders and the railroads together to design the car of the future. I do not know what it might be. It may be many tons lighter than the present cars through use of aluminum, magnesium or other materials. It may have roller bearings. It may look as much different from today's cars as does the modern Pullman car, compared with that of 40 years ago. America is growing. Our economy is still expanding. People have more money to spend and that means more goods to be hauled. The big question that confronts all of us—the railroads and the car builders, is who will carry this freight of the future. The railroads can carry it if we jointly pool our imaginations, our engineering and production skills, and our faith in the future of rail transportation to develop a product that will be more economical for shippers to use, safer for goods handled, speedier, cheaper to buy and operate, and more flexible in use."



The president of the P. & W. V. has already completed the greater part of his tour in four installments, as shown here. Lines do not show the actual rail routes taken; only those points are indicated at which Mr. Graham visited with his customers

The "Westmoreland," 38-year old private car originally built for Steelmaker Frick, furnishes a perfect rolling headquarters for the 50,000-mi. tour

his car temporarily and schedules a dinner party at a suitable hotel or club to which he invites as many shippers as are available. The ceiling on their number is the physical ability of the P. & W. V. president to greet each guest in person, since individual contact is the fundamental purpose of the tour.

Mr. Graham's ambitious undertaking is already well on its way to completion. Starting in February, 1947, he has carried through to completion four separate "installments," during which he has covered practically every city of commercial importance in which are located P. & W. V. customers west of Fort Wayne, Ind., and Indianapolis. The accompanying map indicates the points—in order of call—at which the "Westmoreland" was parked for the entertainment of shippers on the four successive trips, each of which is shown in a separate block. It does not show the points from which shippers came to join Mr. Graham's parties.

Tour One, February 4 to March 1, 1947, covered points on the Pacific coast and in Inter-mountain territory. Tour Two, lasting from May 7 to June 15, 1947, covered a wide area of the North Central and Southwestern states, and included parking of the car at 22 points. Tour Three, running from April 10 to June 25, 1948, took in Pacific Coast points north of and including San Francisco, up through British Columbia and return via the Twin Cities. Tour Four, from October 6 to December 4, concentrated on more thorough coverage of mid-western towns, during which the car was set out and parked at 30 separate points.

Mr. Graham entertained at dinner parties in New York, Philadelphia and Baltimore during December, and in February will meet his customers in similar fashion at St. Louis, Chicago, Detroit, and Cleveland. Later, he will meet his on-line shippers at Pittsburgh. Also during 1949 he intends to make a tour with the "Westmoreland" to reach the smaller cities east of his railroad.

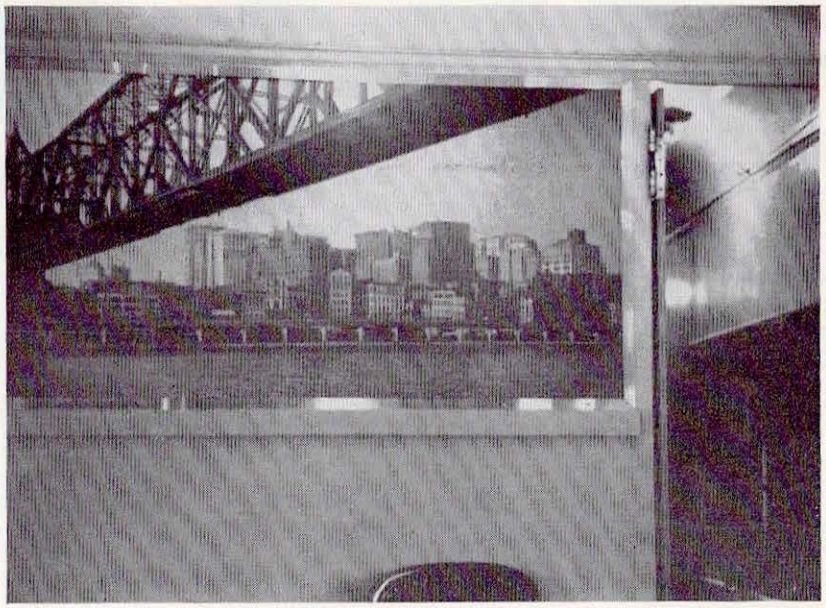
He wants also to meet the traffic men of the railroads with which the P. & W. V. interchanges business directly or through connections. Hence, Howard Cofer, the "Westmoreland's" cook, and Charles Ross, his assistant, get no respite from feeding guests even at breakfast, when the table is crowded with the local traffic officers of "home" roads at almost every point on tour. These morning discussions Mr. Graham describes as "very interesting."

History Behind "Westmoreland"

The "Westmoreland" was built as a private car for Steelmaker H. C. Frick in 1910, and completely rebuilt in 1926. After his death, his daughter Helen took but one trip in it to the Pacific coast, then parked it in a private concrete museum at her summer estate at Pride's Crossing, Mass.

Introduced by Mr. Graham to the late Wendell Willkie in 1940, Miss Frick grew so enthusiastic over the presidential candidate that she had the "Westmoreland" removed from the museum and planned to turn it over to him for his use as president of the United States. When Willkie was defeated Miss Frick gave the car to Mr. Graham for his personal use, with the stipulation that the car be scrapped upon his retirement from railroading.

The 82-ft. car houses an observation-lounge used as a living room; two bedrooms, with private bath, and two compartments, which share a bath. The kitchen and pantry are well equipped for serving a party of 10, and there is a compartment and shower bath for the two-man crew of cook and assistant. At most points arrangements are made to park the car on a track affording steam, electric and telephone connections. Where steam is not available, the crew fires up the Baker heater with which the car is equipped. Staples and vegetables are purchased from nearby markets; Mr. Graham himself occasionally ventures out with market basket to search for local delicacies.



The interior of the "Westmoreland" has been modernized and includes handsome photo murals which help sell Pittsburgh to guests of the P. & W.V.'s president

A large deep-freeze locker in the "Westmoreland" can provision the party with meats for as long as three weeks with one loading.

Work "As Usual"

Since Mr. Graham must attend to running his railroad in between seeing customers, prior arrangements are made to have a direct telephone connection with the local exchange in each city where the car is parked, so that between meals and discussions he runs his affairs at home "as easily as though I were sitting at a telephone across the street." Monthly directors' meetings at Pittsburgh he attends in person, during which time the car is parked at some central point on the itinerary.

Arrangements for the tour are started months in advance. L. G. Walker, vice-president—operations, follows through on all details of schedules, servicing, parking, and facilities at stops with the passenger traffic department of the railroad initiating the movement out of Pittsburgh (the P. & W. V. does not operate passenger service), which, in turn, deals with the passenger traffic managers or general passenger agents of the railroads involved by circular memorandum. The "Westmoreland" has, in the course of the tour, been moved on every type of train in existence, including way freights, but in no instance has any scheduled connection been missed nor has any railroad failed to provide the facilities agreed upon.

Response to the tour thus far has been "way beyond our expectations," Mr. Graham asserts. Off-line shippers are delighted that a railroad president will come to their home territory to meet them. Most of them, especially in the smaller cities, find particular pleasure in spending time on a private railroad car and enjoy its peculiarly intimate hospitality. Indeed, in many cases, their communities see a parked off-line private car for the first time. Shippers have been glad to come from as far as 70 miles distant to partake of the Westmoreland's comforts. Guests often stay as late as midnight—talking "mostly shop"—despite the fact that their hosts (Mr. Graham and the territorial P. & W. V. agent) refrain from even a hint of traffic solicitation and attempt to steer the conversation to the customers' own businesses and problems or to general topics of the day. The experience of staying at the smaller cities and talking with his customers there has been a "revelation," Mr. Graham told *Railway Age*. "Very few individuals living in metropolitan centers have any idea what these smaller cities are doing in industry and commerce—or gage their traffic importance accurately. The extent of activity in all places visited is amazing."

The P. & W. V. is convinced that the personal contact tour is valuable in providing its chief executive and general agents with an intimate knowledge of the business of the country and of the distinctive problems of its individual shippers, wherever they may be; in giving the shippers a better knowledge of the P. & W. V. and its connections; and in creating a personal relationship impossible by any other method. The reaction has more than justified the time and effort involved. It is certain to bear fruit in shaping services more in line with shippers' needs and desires.

RESPONSIBILITY

Businessmen, within the framework of a competitive economy, have a primary responsibility to operate their businesses profitably. It is a responsibility they owe to their stockholders and associates, to their workers and to the public. Without profits the businessman, as job-maker, cannot long provide expanding job opportunities or stability of existing employment. Since profits depend on the loyalty and ability of workers, as well as on the technical skill of management, the businessman should create in his enterprise conditions that encourage the maximum growth and development of the capabilities of employees.
—Committee for Economic Development

THOMAS DREVER ELECTED CHAIRMAN OF AMERICAN STEEL FOUNDRIES; C. C. JARCHOW NEW PRESIDENT

C. C. Jarchow

Thomas Drever

Thomas Drever, president of American Steel Foundries since January 19, 1939, was elected chairman of the board at the annual meeting of directors in New York on January 27. C. C. Jarchow, who had been vice-president with general executive duties since January, 1947, was elected president to succeed Mr. Drever. C. E. Grigsby, formerly assistant vice-president, was elected a vice-president, and L. T. Moate, formerly assistant to the controller, was elected an assistant controller.

Mr. Drever was born on May 2, 1882, in Edinburgh, Scotland, and educated at the Royal High School there. He began his business career as a chartered accountant in Scotland in 1905. Later in the same year he came to New York where he worked as a certified public accountant until 1907, when he moved to Boston, Mass. On April 28, 1910, he joined American Steel Foundries as controller. Mr. Drever resigned this position on November 6, 1924, to assume the presidency of the Wahl Company, now Eversharp, Inc. He rejoined American Steel Foundries, as secretary and treasurer, on March 7, 1929, at which time he also was elected a member of the board of directors. Three years later Mr. Drever was elected vice-president and treasurer, which positions he held until his elevation to the presidency.

The new chairman of A.S.F., who resides in Chicago, is also chairman of the subsidiary Griffin Wheel Company and a director of the Harris Trust & Savings Bank, Chicago. Mr. Drever is a member of the governing boards of the Railway Business Association and the National Industrial Conference Board.

Mr. Jarchow, who has resided in Evanston, Ill., for many years, was born in Chicago in 1894. Although he has never engaged in the public accounting profession, he is a certified public accountant of Illinois and is a member of the Illinois Society of Certified Public Accountants, the American Institute of Accountants and the Controllers Institute of America. He joined American Steel Foundries in May, 1912, and was appointed controller in October, 1924. In January, 1943, he was elected vice-president and controller, retaining those offices until his election as vice-president with general executive duties. Mr. Jarchow has been a director of A.S.F. since September, 1943.

American Steel Foundries was incorporated on June 26, 1902, and in that year and the next acquired the Franklin Steel Casting Company, the Reliance Steel Casting Company, the Sargent Company, the Leighton & Howard Steel Co., the American Steel Foundry Company and the American Steel Castings Company. American Steel Castings was merged with A.S.F. on June 2, 1947, and was dissolved on September 30 of the same year. In 1905 A.S.F. acquired the Simplex Railway Appliance Company, and, in July, 1919, control of Griffin Wheel, producer of chilled iron wheels for railroad service. On September 30, 1948, A.S.F. owned 86,460 shares of Griffin Wheel's common stock, equivalent to 98.7 per cent of the outstanding shares. Other businesses acquired at various times include the Galesburg Malleable Castings Company; the Damascus Brake Beam Company; the Verona, Pa., plant of the Verona Steel Castings Company; the Newark, N. J., steel foundry plant of the American Brake Shoe & Foundry Co.; the McKees Rocks, Pa., plant of Pressed Steel Car Corporation; Charles F. Elmes Engineering Works; and King Machine Tool Company.

The major portion of the company's sales consists of equipment parts sold directly to the railroads or to the builders of railroad cars and locomotives. Among the company's railroad products are freight-car trucks, springs, snubbers, clasp brakes, couplers, brake beams and car wheels. Its industrial division manufactures a line of miscellaneous castings for industrial use and the Elmes engineering division makes hydraulic production equipment. The King machine tool division produces boring and turning machines and lathes.

American Steel Foundries' principal plants are at Granite City, Ill.; Alliance, Ohio; East St. Louis, Ill.; East Chicago, Ind. (Indiana Harbor works); Verona, Pa.; Newark, N. J.; and Hammond, Ind. Griffin Wheel, the company's chief subsidiary, owns plants at Boston; Cincinnati, Ohio; Detroit, Mich.; Chicago; St. Paul, Minn.; Kansas City; Council Bluffs, Iowa; Denver, Colo.; Salt Lake City, Utah; Los Angeles, Cal.; and Tacoma, Wash. During the fiscal year ended September 30, 1948 (the A.S.F. annual report for which appeared in a summarized form in *Railway Age* of December 25, 1948, page 55), the Griffin Wheel subsidiary shipped 295,500 net tons of chilled iron wheels and castings to railroads, to car builders for new equipment and to miscellaneous industrial customers, compared with 302,709 net tons shipped in the previous fiscal year.

GENERAL NEWS

Reasonable Railroad Profits Essential, Says Faricy

"Only alternative" is "drift to some form of government control"

"Reasonable railroad profits are essential to the continued existence of the profit-and-loss system under which the American people enjoy their unparalleled plenty and freedom," William T. Faricy, president of the Association of American Railroads, said at a luncheon meeting of the Los Angeles (Cal.) Chamber of Commerce on February 3.

"The alternative to reasonable railroad profits," Mr. Faricy explained, "is a drift into some form of government control and operation of our railroads. Such a drift has carried railroads all over the world, outside of the North American continent, into state ownership and operation. If our railroads here so drift, contemporary history shows that the same forces would soon engulf other forms of transport, and that would be the longest possible step toward like treatment for all major lines of business and indeed most human activities."

The A.A.R. president pointed out that the rate of return on net investment realized by the railroads in 1948 averaged only 4¼ per cent. This . . . is far less than is earned on capital invested in other lines of business, which are no more subject to risk than the railroad business. And it is not enough to support the continuing program of improvement for still better and more efficient service in the future."

"Successful railroading depends upon handling heavy traffic with high efficiency," Mr. Faricy said. "And that is just what the railroads did in 1948, when traffic volume was nearly half again as much as in the pre-war peak year of 1929. And yet the larger volume of business handled in 1948 earned for the railroads 23 per cent less than was realized on the smaller volume of traffic handled in 1929. This decline in earnings was not due to lessening efficiency, for railroad efficiency in 1948 reached a new high. The decline in earnings was due to the fact that prices and costs, including wages, have risen faster and so much farther than have railroad rates."

"The way to keep on having the kind of privately-owned, business-operated rail transportation upon which this country has thrived," Mr. Faricy stated, "is to have rail revenues in line with costs, producing earnings which compare with those in other business, and which will justify and attract continued investment in improvements. The choice before us is either adequate railroad revenues, adjusted to today's costs, or railroads which are government-operated and tax-supported."

Contrast Between Two Wars

Mr. Faricy cited the contrasting experience of the two kinds of railroad operation in the first and second World Wars. "In the first war," he said, "the government operated the railroads and the taxpayers had to make up a loss which averaged nearly $2 million a day. In the second World War, there was no loss to be made up by the taxpayers, but the railroads paid into the Federal treasury more than $2 million a day. During the first war, the government made substantial increases in freight rates, whereas at the end of the second war, freight rates were no higher, and in many cases were lower, than when war began."

"But even these great savings to the taxpayers and to the shippers do not measure all the gain to the country from busines operation in the second World War, as contrasted with government operation in the first," he said. "The greater gain was in the increased adequacy, efficiency and dependability of transportation. And the greatest gain of all was the shortened timetable to victory—a gain above and beyond statistical measure."

Railroad Earnings of Broad Concern

"To the millions of persons who directly and indirectly own the securities of the railroads it is important that they shall make reasonable profits," Mr. Faricy maintained, "but it is equally important to the men who work on railroads. Prosperous railroads mean better jobs and more pay."

"Railroad profits are important to travelers and shippers," he went on, "for they are the one basis on which there can be financed the improvements which mean more adequate and dependable freight service and more comfortable and safer passenger service."

"But railroad profits," Mr. Faricy concluded, "are of even braoder concern, for they are essential to the continued successful operation of the whole profit-and-loss system, under which the American people produce more, live better and enjoy wider freedom than any other people on earth."

Speaking at a luncheon meeting of the San Francisco (Cal.) Chamber of Commerce two days before his Los Angeles address, Mr. Faricy asserted that railroad freight rates now are "lower in comparison with the value of commodities hauled than they were even before the war. It is because of this abundant low-cost rail service that producers in all sections enjoy nation-wide markets, and consumers everywhere have the widest possible choice of sources of supply."

"Other forms of transportation have aided in that development," the A.A.R. president stated, "but no one of them, or all of them together, could do for this country what is done every day by its railroads." The contributions of other forms of transportation, he added, "are possible because backing them up, servicing their need for fuel and materials, and handling the low-rated commodities which others are not in position to handle, is the system of volume production of transporation in trains of cars on railroad tracks. That system is unapproached anywhere in the world."

To make railroads even more efficient and economical, Mr. Faricy said, "research is going on continually. But to apply the results of research and invention requires money, and the railroads can neither levy taxes nor print money. They get it either from their day to day income from operations, or from investors who will or will not put money into railroads, depending on the prospect of earning a reasonable return."

Freight-Car Repair Called "Operation Rat Hole"

Heavy repairs and rebuilding both "uneconomic," says Snyder

There is ample evidence that the spending of gigantic sums to repair old freight cars is proving to be "operation rat hole," John I. Snyder, Jr., chairman and president of the Pressed Steel Car Company, said in a recent address before the Association of Customers' Brokers at the Curb Exchange in New York. "Accent on repair has been general," he said. "The Office of Defense Transportation has reported this running as high as 30,000 cars undergoing 'heavy repairs' monthly. Rebuilding of cars, which was very low during

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New Car Costs

Following the slump in the freight-car ordering rate some months ago, Mr. Snyder continued, there was discussion of the increased cost of cars. "Of course prices are up. But apparently they remain among the cheaper things that the railroads must buy. The A.A.R.'s economist recently testified that 'fuels, materials and supplies' are more than 120 per cent above 1939 levels. He noted that crossties are up 147 per cent; car lining lumber, 241 per cent; coal at mines, 140 per cent; and Diesel fuel has advanced 124 per cent. I thought of that as I noted the latest large freight car order reported in *Railway Age*, 750 50-ton hoppers for the Reading. The price was $4,300 per car. That, I discovered, represented an advance of only 90 per cent over the average price of hoppers in 1939, as given in I.C.C. records. I have an idea that some of the discussion about the extent of the rise in price of freight cars misses a pertinent point. Almost every time a railroad orders cars today it is buying 'more car' than in 1939—bigger cars, having greater load capacities and hence able to pull in bigger earnings. Such cars weigh more, cost more, carry more—and they are a very sound and profitable investment. The railroads can afford these better transportation tools because they pay for themselves, and quickly. Even the types of cars now long in service, nearly all of smaller load capacity, show a marked increase in gross earnings since 1939. The average annual revenue per freight car in 1947 was nearly 110 per cent above 1939."

"Looking at ourselves in the mirror," the Pressed Steel Car Officer concluded, "neither the railroads nor the car builders can be proud of their accomplishments in delivering better, high-speed transportation to the freight-using public. Railroad cars today are still Model T's. We are trying to meet 1950 competitive conditions with freight cars little different from those of decades past. With all of the new developments of recent years in mechanical design, in tools and new materials, the freight car remains virtually untouched. And, in the meantime, the truck, the bus and the airplane are cutting into railroad revenues and, thus, into the future prosperity of the car building industry. We of the car building industry cannot avoid taking some of the responsibility with this situation because there must be new and better types of freight cars that research can bring to the fore. For example, a better car will carry freight more safely. The Class I railroads' bill for damage to lading in 1947 was nearly $122,000,000.

"The big job ahead is for the car-builders and the railroads together to design the car of the future. I do not know what it might be. It may be many tons lighter than the present cars through use of aluminum, magnesium or other materials. It may have roller bearings. It may look as much different from today's cars as does the modern Pullman car, compared with that of 40 years ago. America is growing. Our economy is still expanding. People have more money to spend and that means more goods to be hauled. The big question that confronts all of us—the railroads and the car builders, is who will carry this freight of the future. The railroads can carry it if we jointly pool our imaginations, our engineering and production skills, and our faith in the future of rail transportation to develop a product that will be more economical for shippers to use, safer for goods handled, speedier, cheaper to buy and operate, and more flexible in use."

"Black Market" Ticket Hearing Moves to Miami

Testimony shows railroads and hotels are overcoming problem

There was a tremendous amount of smoke, but not too much fire, as the Interstate Commerce Commission investigation of alleged "black market" ticket practices moved to Miami, Fla., where hearings were held on January 24-26. The purpose behind these hearings was described in the *Railway Age* of October 16, 1948; the Chicago hearing was reported in the issue of November 27, and the New York hearing in the issue of December 25. The Miami hearing, like the others, was conducted by Commissioner Richard F. Mitchell, with Examiner F. E. Mullen assisting and with C. H. Johns as attorney for the I.C.C.

It was not denied by railway witnesses that some form of "black market" had existed on Miami Beach. Under cross-examination by Alexander S. Gordon, general counsel of the Miami Beach Hotel Operators' Association, this fact was brought out, but it was also evident that the situation is much alleviated this season. The railways made a sincere effort and spent considerable money in tracking down each instance of alleged irregularity, but were unable to find a single complainant who was willing to press charges, or even give details as to what had transpired so that the investigation could be pursued further. Mr. Gordon explained that the hotel owners are most anxious to break up any ticket irregularities that may still exist and promised the complete cooperation of the hotel association, including financial assistance, if necessary, to the railways, in their efforts to police the sale of reservations from the Greater Miami resort area.

George Rone, operator of two hotels in Miami Beach, claimed that, through the intervention of a bellboy in one of his hotels, he was put in touch with a man who procured reservations for him for $25, when he could not get them in any other way. Under cross-examination, Mr. Rone admitted the alleged incident had taken place in 1947, but insisted "everyone knows that the ticket racket is still flourishing." In common with all the Miami Beach hotel men called as witnesses later, Mr. Rone stated that the situation might be alleviated if the railways would follow the air lines' example and establish ticket offices in Miami Beach, as well as in downtown Miami. The hotel men were also unanimous in stating that the situation, as far as securing reservations out of Miami is concerned, has been materially improved, but that the matter of getting reservations southbound is still chaotic and confused.

Khadouri Chaachou, who came to Miami a few years ago and purchased four hotels, was a colorful, if somewhat erratic witness. Despite the fact that Mr. Chaachou stated that he had written "100,000 letters" to the President, to the I.C.C., to the Association of American Railroads, to senators and congressmen and other public figures, as well as to newspapers throughout the country, complaining as to the "ticket racket" existing in Miami, he was an unwilling witness who failed to put in an appearance until a subpoena was served upon him by a United States marshal. Under urging by Commissioner Mitchell, he stated that "everybody on the street at the Beach talks of how much premium he paid to get down here by rail," but, when asked for specific instances, gave none, stating that he had supplied proof in letters already written to the I.C.C. and A.A.R.

Hotels Will Cooperate

Samuel Kaplan, executive secretary of the hotel association, pointed out that there were 380 hotels in Miami Beach and that efforts of porters and transportation clerks in those hotels to supply their patrons with Pullman and coach reservations had resulted at times in the tieing up of such reservations; also that he had had many complaints from operators of smaller hotels who claimed that big hotels "hog" the space.

He said that conditions became so bad that the association had called a meeting with railway representatives in December, 1947, with a view to correcting the evils then existing. He claimed the hotel operators were as anxious as the railroads to see that prospective passengers got a fair break and stated that the present requirement of turning back reservations not to be used at least 72 hours before the departure time of trains had done much to break up the former practice of "hoarding" reservations. He pointed out, however, that some 60 per cent of the clientele of the Miami Beach hotels who use the railways at all use streamlined coach trains on which reservations are required and that their interests must also be considered. He approved of the charge of $1 which will be assessed for such coach reservations effective February 1, but stated that he did not think the charge was high enough. He claimed the principal complaint was that prospective passengers, particularly from the north, are told that no space is available on a certain train and, after "scurrying around" and getting space, either by paying a premium or otherwise, they board the train only to find plenty of vacant space. In conclusion, he offered the services of the association to the railways to further any plan that gave hope of success in alleviating the situation and stated that his association was prepared to share the expense of setting up "reservation clearing houses" in Miami and New York.

Commissioner Mitchell suggested that vacant space on coach trains that were presumably sold out was probably caused by the fact that 25 per cent of the passengers with reservations do not show up, and expressed the hope that the $1 reservation charge might assist in correcting this unfortunate condition. In response to a suggestion from I. N. Parrish, general manager, Miami Beach Chamber of Commerce, that all reservations be checked to assure the railways that they were not being held for speculation under fictitious names, the commissioner stated that the job would be a gigantic one; that the commission obviously could not issue an order of that nature that would apply to Miami alone and cited the fact that it would require the New York Central, for example, to check an average of over 12,000 reservations daily. In response to his question, it developed that some 2,500 reservations are made out of Miami daily at the height of the season.

Hotel Porters Testify

Kenneth Humphreys, transportation manager for the Saxony Hotel in Miami Beach, described the Hotel Transportation Men's Association of Miami Beach, of which he is president. This association, Mr. Humphrey said, was formed for the express purpose of combating the "black market" and exposing "ticket racketeers" and also to counteract the unfavorable publicity, much of it undeserved, that the hotel porters were receiving. This association now has 63 members, representing nearly all the larger hotels on the Beach. Mr. Humphreys explained that, while the hotel pays him $100 per month, his principal source of income is in the form of gratuities from guests for whom he has secured transportation by rail or air. He explained that city ordinances in both Miami and Miami Beach prohibit his asking more than $1 for securing rail tickets and reservations but that tips from guests usually amount to more than that, and are given voluntarily.

Under cross-examination, Mr. Humphreys admitted that he does attempt to anticipate the needs of his guests, sometimes buying their return space in advance of their arrival, but stated that each reservation purchased is intended for some specific guest and, in support of this, pointed out that his cancellations amount to less than 10 per cent of the tickets he purchases.

George Broker, superintendent of service of the President Madison Hotel at Miami Beach, gave substantially the same testimony, but Broker stated that the hotel advances him certain sums with which to buy tickets. Under cross-examination by Attorney Johns, he admitted that he had, in two cases in January, 1949, requested identical reservations on both the Seaboard Air Line and the Florida East Coast for the same two persons.

Bernard L. Krouter, special agent, Bureau of Inquiry, I.C.C., stated that

he had spent some time in the Miami area checking railroad reservation bureau practices and running down complaints as to railway employees accepting bribes for space reservations, but had been unable to substantiate a single case of such violations. He also investigated complaints as to "black market" sales of reservations by other than railway employees, but found that none of the complainants would or could give him details as to names and places so that further investigation could be conducted.

Testimony by the Railways

The unanimous opinion of railway officers who testified was that the situation had much improved, largely because of increased cooperation between railways and hotel owners; the 72-hour cancellation rule on ticket refunds; and the fact that the demand for reservations has not been quite so great this season. However, according to the Miami "Herald" of January 26, a discordant note was sounded by Livingston Goddard, secretary of the Federation for Railway Progress. Mr. Goddard did not appear at the hearing, but, after his statement to the "Herald," Commissioner Mitchell proposed to subpoena him, only to find that he had left town. According to the "Herald," Mr. Goddard said: "The railroads are acting like ostriches with their heads in the sand. They refuse to concede that anything is wrong with their reservation practices. If you don't know a railroad official or if you don't pay a bribe or a tip, you can't get a room. That's the story of the Miami hearing."

J. B. Sharpton, passenger traffic manager of the Atlantic Coast Line, stated that 90 per cent of the requests for Pullman space to and from Florida are for room space of one type or another, while only 40 per cent of the total space available consists of rooms. He presented a statement showing that, on the five principal trains operated northbound out of Miami by the F.E.C. between March 1 and 15, 1948, occupancy of room space was 99.9, 99.4, 95.2, 100 and 92 per cent respectively, as against 73.1, 81.1, 54.1, 80.5 and 73.9 per cent for open section space. As to complaints that space could not be obtained and yet the trains were running "half empty," he pointed out that people making such complaints must have

(*Continued on page* 343)

CHARTER DAY CELEBRATION FOR C. B. & Q.

The celebration of the centennial year of the Chicago, Burlington & Quincy will be launched on February 12, with a Charter Day program at Aurora, Ill., the city in which the system had its genesis.

At the Paramount theatre, at 11 a.m., a group of professional actors and dancers, together with members of the Burlington Zephyr chorus, will present a series of dramatic sketches depicting in turn: (1) Departure of Chief Blackhawk and his Indian tribes from Northern Illinois in 1833, leaving the area for settlement by the whites; (2) The difficult and costly transportation conditions existing about 1840—particularly between Aurora and Chicago; (3) Debate over the granting of a charter to the Aurora Branch Railroad (nucleus of the Burlington) in the Illinois legislature and eventual passage and signature by Governor Augustus C. French, and (4) Aurora's celebration of the granting of the charter.

Script for the presentation has been written by Gordon A. Taylor; it will be produced by Mrs. Helen T. Geraghty. The dances will be directed by Romola James.

The presentation will be followed by a luncheon in the Leland hotel sponsored by the Aurora Chamber of Commerce, which will be attended by a large delegation of prominent citizens, including Burlington officers, from Chicago.

Burlington Day observances are tentatively scheduled at various key points on the system on dates throughout the forthcoming spring and summer.

New York Central Asks Increase in Ferry Fares

The New York Central has asked the Interstate Commerce Commission for permission to increase rates on passenger and vehicular traffic moving over ferryboats operated by the West Shore (N.Y.C. subsidiary) across the Hudson river between New York City and Weehawken, N. J.

The railroad pointed out that expansion of public bridge and tunnel facilities between New Jersey and New York City had caused ferryboat revenues, including the portion attributable to rail-ferry passengers, to fall from $1,060,207 in 1939 to $610,699 in 1947. Meanwhile, ferryboat operating expenses, without allowance for any return on investment, jumped from $1,337,075 to $2,102,158. The rate of loss increased further in 1948.

President Appoints Fact-Finding Board in Diesel Dispute

To avert the strike called for January 31 against 15 Western railroads by the Brotherhood of Locomotive Engineers, following the carriers' refusal to arbitrate the union's demand for a second engineman on multiple-unit Diesel locomotives, President Truman has appointed an emergency fact-finding board. Members of the board, which is scheduled to begin hearings in Chicago on February 7, are George W. Taylor, professor at the Wharton School of the University of Pennsylvania; Col. Grady Lewis, Washington, D. C., attorney; and George E. Osborne, professor in the Law Department of Leland Stanford University.

It is understood the board's jurisdiction covers all the roads, 60 in number, on which the B. of L. E. has demanded extra Diesel enginemen. Details of the dispute were given on page 36 of last week's *Railway Age*.

Freight Car Loadings

Revenue carloadings for the week ended January 29 totaled 679,255 cars, the Association of American Railroads announced on February 3. This was a decrease of 30,330 cars, or 4.3 per cent, below the previous week; a decrease of 47,090 cars, or 6.5 per cent, below the corresponding week last year; and a decrease of 155,796 cars, or 18.7 per cent, under the equivalent 1947 week.

Loadings of revenue freight for the week ended January 22 totaled 709,585 cars, and the summary for that week as compiled by the Car Service Division, A.A.R., follows:

Revenue Freight Car Loadings
For the week ended Saturday, January 22

District	1949	1948	1947
Eastern	134,725	142,511	152,228
Allegheny	153,191	161,640	171,393
Pocahontas	60,145	66,625	72,646
Southern	125,586	130,709	140,054
Northwestern	72,109	81,401	90,083
Central Western	106,338	126,610	131,670
Southwestern	57,491	61,643	63,854
Total Western Districts	235,938	269,654	285,607
Total All Roads	709,585	771,139	821,928
Commodities:			
Grain and grain products	43,888	44,703	56,732
Livestock	10,490	9,460	14,033
Coal	158,242	181,545	193,282
Coke	15,398	15,263	14,042
Forest products	37,362	42,822	45,980
Ore	12,579	11,059	12,468
Merchandise l.c.l.	90,155	103,074	116,936
Miscellaneous	341,471	363,213	368,455
January 22	709,585	771,139	821,928
January 15	733,272	808,308	828,060
January 8	721,507	830,810	830,953
Cumulative total 3 weeks	2,164,364	2,410,257	2,480,941

In Canada.—Carloadings for the week ended January 22 totaled 71,767 cars, as compared with 74,956 cars for the previous week, and 71,769 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
January 22, 1949	71,767	32,761
January 24, 1948	71,769	34,317
Cumulative totals for Canada:		
January 22, 1949	214,270	95,490
January 24, 1948	222,376	103,313

Twelve RRs Add Fee to Cost of Reserved-Seat Coach-Train Fare

Twelve eastern and southern railroads have added a special charge to the price of tickets on reserved-seat coach trains for use beginning February 1 (see *Railway Age* of January 22, page 51). The 12 are the New York Central (including the Boston & Albany), the Pennsylvania, the Chicago & Eastern Illinois, Illinois Central, the Louisville & Nashville, the Nashville, Chattanooga & St. Louis, the Central of Georgia, the Richmond, Fredericksburg & Potomac, the Seaboard Air Line, the Atlantic Coast Line and the Florida East Coast.

ORGANIZATIONS

Rochester Club Sponsors Week of Anniversary Celebrations

Twenty-five years of transportation progress will be celebrated in Rochester, N. Y., the week of February 7, in connection with the twenty-fifth anniversary of the Transportation Club of the Rochester Chamber of Commerce. Highlight of the week will be the club's silver anniversary dinner on February 10, announcement of which was published in the *Railway Age* of January 22, page 52.

In addition to the dinner a series of displays portraying 25 years of transportation progress will be on exhibition in the chamber of commerce lobby. These displays will include, among others, working model railroads and models of railroad equipment ranging from that in use 25 years ago to the latest now in service. A series of transportation movies, open to the public, will be shown continuously each noon during the week at the chamber of commerce.

Albert J. Monro, vice-president of the Blanchard Storage Company, is in general charge of arrangements. Among those assisting him is Frank Corlett, division freight agent of the Erie.

P. T. McKinney, of the general publicity department, Union Carbide & Carbon Corp. will present an address on "Three Hundred Years of Rail" before the **Chicago Chapter** of the **Railway and Locomotive Historical Society** on February 11, at 7:30 p.m., at 84 East Randolph street. His talk will be illustrated with 70 slides.

Theodore M. West of the Association of American Railroads was elected president of the **San Francisco Traffic Club,** at its January 19 meeting. Other officers elected were: Vice-president, Jack R. Collingwood, Standard Oil Company of California; treasurer, A. Button, Pacific Chemical & Fertilizer Co., and secretary, Franklin J. Keleher.

The next meeting of the **Canadian Railway Club** will be held on February 14, at 8 p.m., at the Mount Royal Hotel, Montreal, Que. Dr. Gustave Gindras will present an illustrated talk on "Rehabilitation of the Paraplegic."

E. Grosvenor Plowman, vice-president in charge of traffic for the United States Steel Corporation, will be the guest speaker at the meeting of the **Women's Traffic Club of New York** on February 8, at the Park Sheraton Hotel, Seventh avenue and 55th street. His subject will be "Nationalization of British Railroads."

The **Car Department Association of St. Louis** will hold its next meeting on February 15, at 8 p.m., at the Hotel DeSoto, St. Louis, Mo. J. R. Jackson, mechanical engineer, Association of American Railroads, Chicago, will talk on "A.A.R. Research Activities of Interest to the Car Department."

CAR SERVICE

Suspends Order Requiring Heavy Loading of Carload Freight

The Office of Defense Transportation has suspended from February 14 until April 16 its General Order ODT 18A, the minimum-loading order for carload freight. The suspension came in Suspension Order ODT 18A, Revised-1, and it applies not only to the order but also to all outstanding special directions and permits issued in connection therewith.

The announcement by Director J. Monroe Johnson of O. D. T. emphasized that the order "is not being revoked but is merely being suspended for a 60-day period during which carloadings are normally far below peak levels." The O. D. T. director attributed the decline in carloadings at this time "in part" to the "severe wintry conditions which have prevailed in various portions of the country." He added that the suspension order would be "promptly revoked" in the event "pronounced freight car shortages threatened to develop" during the 60-day period.

EQUIPMENT AND SUPPLIES

Domestic Equipment Orders Reported in January

Domestic orders for 1,425 freight cars were reported in *Railway Age* in January. No orders were reported for locomotive or passenger cars. The approximate cost of the freight cars is $5,800,000. An accompanying table lists the orders in detail.

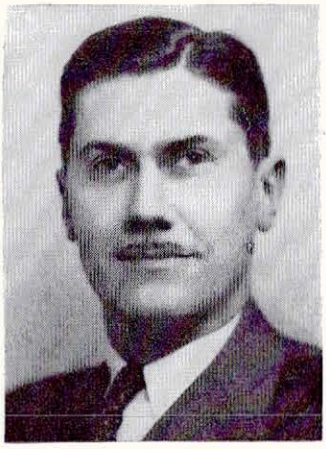
Freight Cars

Date	Purchaser	No.	Type	Builder
Jan. 1	Reading	750	50-ton Hopper	Bethlehem
Jan. 15	D. & T.S.L.	125	70-ton Cov. Hopper	Greenville
Jan. 22	Mather Stock Car Co.	50	40-ton Refrig.	Co. Shops
Jan. 22	N. P.	500	70-ton Hopper	Pressed Steel

SUPPLY TRADE

The **Vapor Heating Corporation,** Chicago, has opened a new office at Houston, Tex., with **J. T. Elwood,** formerly located at the firm's St. Louis (Mo.) office, in charge.

H. L. Lansing, whose election as vice-president—sales and engineering of the **Rail Joint Company,** with headquarters in New York, was announced in the January 8 issue of *Railway Age*, was born in Schenectady, N. Y., on June 17, 1907. He attended Union College in that city,



H. L. Lansing

graduating in civil engineering in 1928, and joined Rail Joint as a draftsman in November of that year. He was advanced to research engineer in 1939 and was further promoted to chief engineer in 1943, the position he held at the time of his election as vice-president.

Herbert J. Rosen, whose election as president of the **Griffin Wheel Company,** Chicago, was reported in the *Railway Age* of December 18, 1948, was born at Brooklyn, N. Y., on February 12, 1885. He entered the service of Griffin Wheel on July 2, 1900, and has re-

Herbert J. Rosen

mained with the company continuously since that time. He was elected a vice-president and director in December, 1943, and was serving as executive vice-president at the time of his election as president.

Ernest P. Waud, whose election as chairman of the executive committee, **Griffin Wheel Company**, Chicago, was reported in the *Railway Age* of December 18, 1948, was born on April 10, 1882, in London, England, and came to the United States with his parents in 1891. He attended St. Paul's Cathedral School at Garden City, N. Y., and Cornell University. Mr. Waud entered the

Ernest P. Waud

service of Griffin Wheel on May 1, 1905, and advanced through successive positions to that of president on December 3, 1937, which post he held until his recent election as executive committee chairman. He is a director of the firm, and also of the American Steel Foundries, the Union Special Machine Company, the Pyle-National Company and the Ideal Roller & Manufacturing Co.

D. R. Staples has been appointed manager of the Diesel locomotive engineering department of the **Baldwin Locomotive Works**, and **Ralph A. Miller** has been appointed section manager, electrical section, of the same department.

R. G. LeTourneau, Inc., has announced the following appointments: **S. A. Batorson**, district sales representative for northeastern United States and Eastern Canada, at Syracuse, N. Y., to assist LeTourneau distributors in New York, Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, Maine, New Brunswick, Nova Scotia, Newfoundland and New Foundland-Labrador and Prince Edward Island; **F. W. Duke**, district sales representative to assist LeTourneau distributors in lower New York state, upper New Jersey, Pennsylvania and Maryland; **M. B. Crowley**, district sales representative, at Raleigh, N. C., to assist LeTourneau distributors in Virginia, West Virginia, and North and South Carolina; and **J. Sevick**, district sales representative in Oklahoma, Arkansas, Mississippi, Louisiana and western Tennessee. In those states Mr. Sevick will assist LeTourneau distributors, the Kessler-Simon Machinery Company, the Tri-State Equipment Company, and the Watkins-Aldridge Equipment Company.

Negotiations to combine the **Taylor-Wharton Iron & Steel Co.** and the **Weir Kilby Corporation** have been completed. The move, which involves an exchange of stock, will strengthen the competitive position and earning power of both companies, **G. R. Hanks**, president of Taylor-Wharton, said. "The association of these two businesses gives Taylor-Wharton the opportunity of supplying the manganese steel for Weir Kilby's operations and of developing business in the territory served by that company's Birmingham plant," he explained in a letter to stockholders. "There will be no change in the management or corporate name of Weir Kilby. **O. DeGray Vanderbilt, Jr.**, will continue as president, and **O. DeGray Vanderbilt III** as vice-president. In like manner, Taylor-Wharton's entity and management will remain intact. It is expected that Mr. Vanderbilt and his son will both become officers and directors of Taylor-Wharton at the next annual meeting."

George L. Cotter, whose appointment as director of engineering of the **Westinghouse Air Brake Company** at Wilmerding, Pa., was reported in the *Railway Age* of January 15, is a graduate of the University of Michigan. Mr. Cotter has been associated with Westinghouse Air Brake since 1923, and served in various capacities in the engineering depart-

George L. Cotter

ment and in the general office until his appointment in 1929 as district engineer for the Pittsburgh (Pa.) district. In 1940 he was appointed commercial engineer, and in 1943 was advanced to western district engineer at Chicago. He was promoted to assistant western manager there in 1945 and to western manager in March, 1947. He held the latter post at the time of his appointment as director of engineering.

The **Chain Belt Company** has announced the opening of two new district sales offices, one at 8001 Clayton road, St. Louis, Mo., under the direction of **Clarence R. Studer**, district sales engineer, and the other at 340 W. Church street,

Clarence R. Studer

Jacksonville, Fla., under the direction of **David B. Hill**. Mr. Studer was with the General Electric Company as application and sales engineer for 19 years. He handled the products of Chain Belt in the St. Louis area for four years before his recent appointment as district sales engineer. Mr. Hill began his business career as conveyor engineer with

David B. Hill

the Ford Motor Company and has had over 25 years of experience covering design, installation, service and sales in this and closely related fields. He joined Chain Belt in 1937 and was district sales engineer in the Chicago and Atlanta, Ga., offices before his new appointment as district manager at Jacksonville.

Frank W. Klimcheck, recently elected president of the **Ashtabula Hide & Leather Co.**, has announced that **Hosea Hill** and his son, **Lawrence Hill**, have sold their interest in the firm and retired from the business. **Howard Van** has been elect-

ed executive vice-president of the company and **Maurice C. Howe,** who has been with the company 37 years, has been elected vice-president.

Robert Watson, a representative of the **Hulson Company,** Chicago, has been elected vice-president of the firm, and **William C. Douglas,** whose retirement as assistant vice-president—freight traffic, New York Central, at Chicago, was reported in the *Railway Age* of January 1, has been appointed assistant to the president. Mr. Watson

Robert Watson

served an apprenticeship in locomotive construction and design at Kilmarnock, Scotland, in which country he was born. He came to the United States in 1923 and joined the Ingersoll-Rand Company as a machinist and, shortly thereafter, worked as a draftsman for the American Locomotive Company. In 1925 Mr. Watson joined the Erie as chief drafts-

William C. Douglas

man in Cleveland, Ohio, which position he held until 1929, when he joined the Firebar Corporation as mechanical and sales engineer. He was appointed sales engineer and western sales manager for the Waugh Equipment Company in 1932. From 1938 to 1941, Mr. Watson was employed by Manning, Maxwell & Moore, and in the latter year returned to Waugh Equipment as assistant to the president and vice-president. In May, 1948, he joined the railway equipment division of the American Welding & Manufacturing Co., and several months later joined the staff of the Hulson Company.

Mr. Douglas entered railroad service on September 1, 1895, at the age of 15, as a messenger in the traffic department of the Michigan Central (N. Y. C.) at Chicago. After serving in various capacities at that point, he became chief clerk to the general freight agent at Detroit, Mich., in August, 1917. Mr. Douglas next served successively as division freight agent at Grand Rapids, Mich., and Detroit, later advancing to assistant general freight agent at the latter point. He was transferred back to Chicago in September, 1919, and subsequently appointed assistant freight traffic manager. Mr. Douglas next held successive positions as freight traffic manager, assistant general freight traffic manager and assistant vice-president —freight traffic. He retired from the latter post on January 1, at which time he joined the Hulson Company as assistant to president.

Nelson C. Walker, assistant district manager of the Berwick, Pa., plant of the **American Car & Foundry Co.,** has been appointed district manager of that plant, to succeed **Justus W. Lehr,** who has been granted an extended leave of absence. Mr. Walker received a B.S. degree in

Nelson C. Walker

mechanical engineering from Rutgers University and studied for his master's degree at the University of Iowa. He was, for several years, industrial engineer for the Glenn L. Martin Company in Baltimore, Md., after which he joined the Waterbury Clock Company as chief industrial engineer, later becoming project manager of manufacturing. Subsequently, he joined the Noma Electric Corporation as chief engineer and assistant to the vice-president of manufacturing and, immediately before joining American Car & Foundry, was president of the United Tank Corporation.

David P. Jones, formerly associated with the Curtiss-Wright Corporation, has joined the **Valve Pilot Corporation** as purchasing agent.

The **Nathan Manufacturing Company** has announced the following additions to its organization: **M. W. McMahon,** working out of Buffalo, N. Y.; **J. W. Rapp,** working out of Roanoke, Va.; **Joseph Schultz, Jr.,** working out of Albany, N. Y., and **D. M. Vance,** working out of San Antonio, Tex.

Thompson-Bremer & Co., Chicago, manufacturers of Everlock fastening products, has announced the election of **Henry T. Chamberlain** as president, succeeding **Arthur H. Thompson,** founder of the company, who has been elected chairman of the board. Other officers elected are: **William J. Dunn,** vice-president; **Joseph M. Griffen,** secretary, and **Walter M. Neuman,** controller.

Fairbanks, Morse & Co., Chicago, has announced a series of promotions and changes in its sales division, as follows: **O. O. Lewis,** assistant sales manager, promoted to sales manager; **Harry L. Hilleary,** for the past 17 years manager of the St. Louis, Mo., branch, transferred to Chicago as assistant sales manager; **L. A. Weom,** manager of the pump division, transferred to St. Louis as branch house manager, succeeding Mr. Hilleary; and **Donald T. Johnstone,** assistant manager of the pump division, promoted to succeed Mr. Weom as manager of the division.

J. R. Feeney, formerly manager of the Chattanooga, Tenn., branch of the **Graybar Electric Company,** has been appointed operating manager at the Birmingham, Ala., branch, and **J. D. Akers,** formerly manager of the outside construction and supply department at Kansas City, Mo., has been appointed manager of the Lansing, Mich., branch.

W. H. Fehrs, formerly assistant to the president, in charge of railroad sales, of the **Union Asbestos & Rubber Co.,** has been appointed a vice-president with headquarters in the main office at Chicago.

FINANCIAL

Correction, N.C. & St. L., not Nickel Plate, Plans Equipment-Trust Issue

It was reported incorrectly in the *Railway Age* of January 22, page 55, that the New York, Chicago & St. Louis (Nickel Plate) had applied to the Interstate Commerce Commission for authority to assume liability for $4,320,000 of equipment trust certificates. The application was filed by the Nashville, Chattanooga & St. Louis.

Missouri-Kansas-Texas. — *Interest Payment.*—Directors of this road authorized an interim payment on February 1 of one coupon of the adjustment mortgage bonds. The coupon, which bears the date October 1, 1941, represents interest at 5 per cent for the six months ended June 30, 1941.

St. Louis-San Francisco.—*Dividend.*—This road has declared an initial dividend of $1 a share on the common stock, payable March 1 to stockholders of record February 14.

New Securities

Applications have been filed with the Interstate Commerce Commission by:

Atlantic Coast Line.—To assume liability for $10,665,000 of series J equipment trust certificates, the first installment of a proposed $19,350,000 issue to finance in part acquisition of the following equipment:

	Description and builder	Estimated Unit Cost
3	2,000-hp. Diesel-electric passenger locomotives (Electro-Motive Division, General Motors Corporation)	$219,438
3	2,000-hp. Diesel-electric passenger locomotives (Electro-Motive)	219,301
12	3,000-hp. Diesel-electric freight locomotives, each consisting of one 1,500-hp. "A" unit and one 1,500-hp. "B" unit (Electro-Motive)	316,135
1,800	box cars (American Car & Foundry Co.)	4,341
1,000	hopper-bottom coal cars (A.C.F.)	3,458
145	pulpwood cars (A.C.F.)	3,999
2	baggage cars (A.C.F.)	60,723
6	double-bedroom, bar-lounge sleeping cars (A.C.F.)	122,632
6	two-drawing-room, fourteen-roomette sleeping cars (A.C.F.)	118,834
20	coaches (Pullman-Standard Car Manufacturing Company)	92,619
10	dining cars (Pullman-Standard)	120,862

The locomotives were delivered last year in July and December, and the cars are now being delivered. Certificates of the $10,665,000 installment proposed to be issued at this time would be dated March 1, and would mature in 15 annual installments of $711,000 each, beginning March 1, 1950. They would be sold on the basis of competitive bids, and the interest rate would be fixed by such bids.

Pennsylvania.—To assume liability for $10,005,000 of series W equipment trust certificates, the first installment of a proposed $19,995,000 issue, the whole of which would finance in part the acquisition of the following equipment:

	Description and builder	Estimated Unit Cost
4	660-hp. Diesel-electric switching locomotives (American Locomotive Company)	$ 82,500
5	660-hp. Diesel-electric switching locomotives (American)	83,000
6	1,500-hp. Diesel-electric freight locomotive "A" units (Baldwin Locomotive Works)	190,000
6	1,500-hp. Diesel-electric freight locomotive "B" units (Baldwin)	162,000
16	1,000-hp. Diesel-electric switching locomotives (Baldwin)	106,000
25	660-hp. Diesel-electric switching locomotives (Baldwin)	83,000
18	2,000-hp. Diesel-electric passenger locomotive "A" units (Electro-Motive Division, General Motors Corporation)	243,000
22	1,500-hp. Diesel-electric freight locomotive "A" units (Electro-Motive)	190,000
5	1,500-hp. Diesel-electric freight locomotive "B" units (Electro-Motive)	162,000
10	600-hp. Diesel-electric freight locomotives (Electro-Motive)	81,500
10	1,000-hp. Diesel-electric switching locomotives (Fairbanks, Morse & Co.)	106,000
4	1,000-hp. Diesel-electric switching locomotives (Fairbanks, Morse)	105,500
7	380-hp. Diesel-electric switching locomotives (General Electric Company)	53,000
25	single-bedroom sleeping cars (Budd Company)	148,000
6	single and double bedroom sleeping cars (Budd)	144,000
14	single and double bedroom sleeping cars (Pullman-Standard Car Manufacturing Company)	127,000

The whole $19,995,000 issue, of which the $10,005,000 installment now proposed is a part, would be dated November 1, 1948, and would mature in 15 annual installments of $1,333,000 each, beginning November 1, 1949. The installment would be sold on the basis of competitive bids and the interest rate would be fixed by such bids.

Division 4 of the I.C.C. has **authorized:**

International-Great Northern. — To assume liability for $1,870,000 of equipment trust certificates, series BB, to finance in part the acquisition of 500 gondola cars (see *Railway Age* of January 15, page 51). The certificates will be dated January 15, and will mature in 10 annual installments of $187,000 each, beginning January 15, 1950. The commission's report approved a selling price of 99.31 for the issue with a 2½ per cent interest rate—the bid of Halsey, Stuart & Co., which will make the average annual interest cost approximately 2.66 per cent. The certificates were reoffered to the public at prices yielding from 1.6 to 2.8 per cent, according to maturity.

Pennsylvania.—To assume liability for $7,965,000 of equipment trust certificates, series V, the second and final installment of a $15,900,000 issue, the proceeds of which are being used to finance in part the acquisition of equipment costing a total of approximately $19,877,500 (see *Railway Age* of January 15, page 51). The certificates will be dated November 1, 1948, and will mature in 15 annual installments of $531,000 each, beginning November 1, 1949. The commission's report approved a selling price of 99.802 for the issue with a 2½ per cent interest rate—the bid of Salomon Bros. & Hutzler, which will make the average annual interest cost approximately 2.55 per cent. The certificates were reoffered to the public at prices yielding from 1.25 to 2.7 per cent, according to maturity.

St. Louis, Brownsville & Mexico.—To assume liability for $1,870,000 of equipment trust certificates, series BB, to finance in part the acquisition of 500 gondola cars (see *Railway Age* of January 15, page 51). The certificates will be dated January 15, and will mature in 10 annual installments of $187,000 each, beginning January 15, 1950. The commission's report approved a selling price of 99.389 for the issue with a 2½ per cent interest rate—the bid of Salomon Bros. & Hutzler, which will make the average annual interest cost approximately 2.64 per cent. The certificates were reoffered to the public at prices yielding from 1.6 to 2.75 per cent, according to maturity.

Dividends Declared

Cleveland & Pittsburgh.—7% regular guaranteed, 87½¢, quarterly; 4% special guaranteed, 50¢, quarterly; both payable March 1 to holders of record February 10.

Erie.—$5 preferred A, $1.25, quarterly, payable March 1, June 1, September 1 and December 1 to holders of record February 11, May 13, August 15 and November 15.

Illinois Central.—6% preferred, $3.00, payable March 1 to holders of record February 8.

Nashville, Chattanooga & St. Louis.—$1.00, payable March 1 to holders of record February 9.

New York, Chicago & St. Louis.—6% preferred (accum.), $1.50, payable April 1 to holders of record February 25.

Norfolk Southern.—75¢, quarterly, payable March 15 to holders of record March 1.

Norfolk & Western.—75¢, quarterly, payable March 10 to holders of record February 9.

North Carolina.—7% guaranteed, $3.50, semi-annually, payable February 1 to holders of record January 20; 7% guaranteed, $3.50, semi-annually, payable August 1 to holders of record July 20.

Reading.—4% non-cumulative 1st preferred, 50¢, quarterly, payable March 10 to holders of record February 17.

St. Louis-San Francisco.—common (initial), $1.00, payable March 1 to holders of record February 14; 5% conv. preferred A v.t.c., $1.25, quarterly, payable March 15, June 15, September 15 and December 15 to holders of record March 1, June 1, September 1 and December 1.

Southern.—common, $1.00, quarterly, payable March 15 to holders of record February 15; 5% non-cumulative preferred, $1.25, quarterly, payable March 15, June 15 and September 15 to holders of record February 15, May 13 and August 15.

Average Prices Stocks and Bonds

	Feb. 1	Last week	Last year
Average price of 20 representative railway stocks	42.85	43.54	48.65
Average price of 20 representative railway bonds	89.58	90.35	86.62

CONSTRUCTION

P. R. R. Continues Work on Pittsburgh Passenger Station

A second step in the Pennsylvania's $20,000,000 program for improvement and modernization of its Pittsburgh, Pa., passenger terminal has been authorized by the road's board of directors, it was announced on February 2 by J. A. Appleton, vice-president. This part of the program will cost approximately $6,000,000, and will include extension of station tracks; construction of new platforms; building of a new exit for passengers on Liberty avenue and construction of a new taxicab loading station at the exit; building of a new interlocking plant, and erection of enclosed shelters covering the tracks. Engineering work, ordering of materials and contractual arrangements are scheduled to get underway immediately.

The first step in the program is nearing completion as scheduled, at a cost of about $2,000,000. As described in *Railway Age* for December 13, 1947, it included removal of the old train shed, many track changes preparatory to the work contemplated in the second step, the construction of a new service building for employees and a new underground passageway between the service building and Liberty avenue east of 20th street for the convenience of yard employees.

Work to be undertaken in future steps in the program includes: The construction of a lower concourse, with moving stairways, to permit passengers to reach westbound trains without crossing tracks; the building of moving stairways leading directly to the Grant Street ramp, for the use of commuters who do not wish to go through the station building; modernization of the outside rotunda leading to the main entrance of the station (walks will be widened and more space will be provided for taxicabs and automobiles); and complete renovation of the waiting rooms of the station building. The walls will be redecorated, new floor laid and the columns refinished. All lighting will be of the indirect type.

"Q" Plans New Railroad as Chicago-Kansas City Link

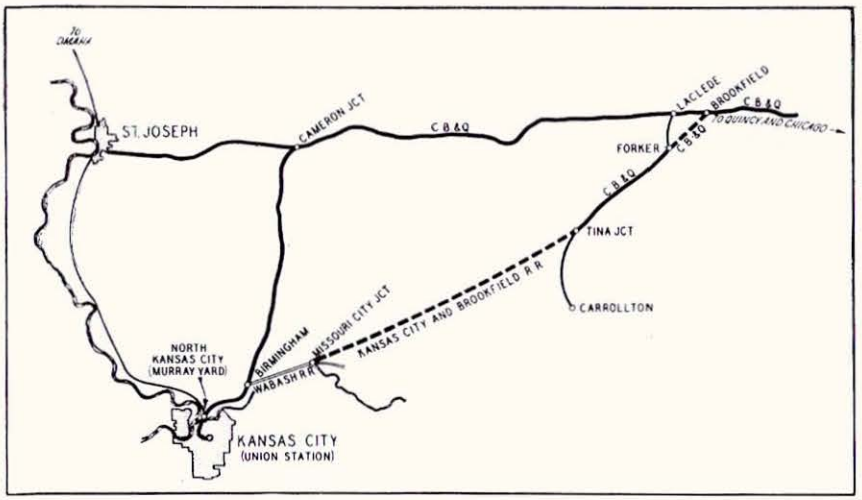
A program for shortening the Burlington's Chicago-Kansas City, Mo., main line by 23 miles was disclosed last week in the filing at Jefferson City, Mo., of articles of incorporation for a new 45-mi. railroad to be known as the Kansas City & Brookfield. The terminal points named in the articles of the new railroad are, respectively, a junction with the Wabash about two miles east of Missouri City in Clay county and a junction with the Burlington's Carrollton branch near Tina in Carroll county (see accompanying map).

The Burlington proposes to use Wabash tracks for 12½ miles between Birmingham and Missouri City Junction, the new railroad for 45¼ miles between Missouri City Junction and Tina Junction, the Burlington's Carrollton branch for 21½ miles between Tina Junction and Forker, and a new 7-mi. cut-off to be built by the Burlington between the latter town and a point just west of Brookfield. The resulting 86-mi. route would be practically straight, would shorten the Burlington's Chicago-Kansas City main line 23 miles and would be much faster than its present line via Cameron Junction.

The new route would reduce the running time of night passenger trains between Chicago and Kansas City by an estimated 2½ to 3 hr., and would permit operation of daytime "Zephyrs" leaving the two cities at noon and arriving at destinations by 7:30 p.m. Freight train schedules would be similarly affected, speeding up service not only on the Chicago-Kansas City line but to and from points beyond on connecting lines.

Chicago, Indianapolis & Louisville.—This road plans to replace 13.7 mi. of 90-lb. rail between Monon, Ind., and Lafayette with 115-lb. rail during 1949. Approximately 10 mi. of the released rail will be moved to the Michigan City (Ind.) branch. Ditching and bank restoration work amounting to approximately $50,000 will be undertaken this year and some 100,000 cross ties will be installed, including 100 sets of switch ties.

Chicago, Rock Island & Pacific.—This road has awarded the following contracts, the estimated costs of which are shown in parentheses: To The Day Company, Minneapolis, Minn., for installation of a new dust collecting system in grain elevator at Armourdale, Kan. ($111,000); to Lobert & Klein, Duncan, Okla., for construction of a new 32-ft. by 136-ft. combination freight and passenger station and platforms at Duncan ($77,500); to List & Weatherly Construction Co., Kansas City, Mo., for substructure and steel erection work in connection with the replacement at Peck, Kan., of a 20-panel pile trestle with six deck plate girder spans on concrete masonry ($89,000); to Wolfes-Jensen & Co., Chicago, for masonry remodeling at Athol, Kan., of bridge No. 2581, two deck plate girder spans of which will be replaced with heavier steel ($22,000); to the Duffin Iron Works, Chicago, for steel fabrication and erection in connection with the 1,440-ft. extension of platforms and canopies between four tracks at the LaSalle Street station in Chicago, the project being undertaken jointly with the New York Central at a total cost of $101,500; to the A. M. Turner Company, Chicago, for roof covering, drainage and concrete work involved in the aforementioned project at the La Salle Street station; and to Knott & Mielly, Inc., Chicago, for the replacement of electric distribution lines with underground construction and for the installation of a new switch gear at the road's Fifty-first Street passenger car shops in Chicago ($242,500).



RAILWAY OFFICERS

EXECUTIVE

H. J. McDonald, assistant to the president of the New York, Chicago & St. Louis, at Cleveland, Ohio, has been elected vice-president. Mr. McDonald was born at Chilesburg, Ky., on October 22, 1890, and was educated at Millersburg Military Institute, Kentucky State University and the United States Military Academy. He entered railroad service on October 22, 1910, as a clerk for the Chesapeake & Ohio at Lexington, Ky., serving in this capacity for six years. Subsequently, he served the

H. J. McDonald

C. & O. as fuel inspector, fuel clerk, allotment commissioner and chief clerk to the assistant superintendent of transportation, all at Huntington, W. Va. Mr. McDonald went to the general offices at Cleveland on January 1, 1934, as chief clerk to the assistant to the vice-president. Three years later he became office manager to the assistant to the president and, on July 22, 1939, he was appointed assistant to the vice-president of the C. & O. On February 16, 1943, Mr. McDonald became assistant to the president of the New York, Chicago & St. Louis.

H. A. Sanders, trainmaster of the Grand Trunk Western at Durand, Mich., has

been promoted to assistant to the vice-president and general manager, with headquarters at Detroit, Mich., succeeding the late **A. J. Clancy,** whose death was reported in the *Railway Age* of January 15. **W. A. Eddy,** general yardmaster at Durand, replaces Mr. Sanders.

E. Spencer Miller, vice-president and general counsel of the Maine Central, has been elected first vice-president, with headquarters as before at Portland, Me.

W. K. Chapman, division freight agent of the Pennsylvania at Washington, D. C., has been named assistant to vice-president of the Central region, with headquarters at Pittsburgh, Pa. Mr. Chapman will be in charge of public relations for the road in that area. A native of Crafton, Pa., Mr. Chapman attended public schools there, and was graduated from Phillips Andover Academy, Andover, Mass. He received his bachelor of arts degree from Princeton University in 1933 and entered the

W. K. Chapman

service of the Pennsylvania at Pittsburgh in 1935, serving in various freight station and yard offices. In 1936 he was promoted to trace clerk at Wheeling, W. Va. After serving in several clerical positions at Cleveland, Ohio, Youngstown and Akron, he was advanced to freight solicitor at Pittsburgh. In 1944 Mr. Chapman was promoted to district freight agent at San Francisco, Cal., and became division freight agent at Washington, on March 16, 1948.

Timothy G. Sughrue, chief engineer of the Boston & Maine, the Maine Central and the Portland Terminal, has been elected executive vice-president of those roads with headquarters remaining at Boston, Mass. Mr. Sughrue was born in Nashua, N. H., on February 22, 1889, and entered railroad service in June, 1906, as a section man on the B. & M. after graduating from Nashua high school. He attended the University of New Hampshire and during summer vacations in 1906 and 1907 worked as a yard clerk and sectionman. In 1909, after graduation, he was appointed chainman, becoming a rodman in 1910, a draftsman in 1911, assistant supervisor of bridges and buildings in 1914 and supervisor of bridges and buildings in

Timothy G. Sughrue

1918. Mr. Sughrue was appointed division engineer of the Terminal division of the B. & M. in 1927. In 1939 he was appointed engineer of maintenance of way of the Maine Central and Portland Terminal, and became chief engineer of those roads and the Boston & Maine on April 15, 1942.

W. Tyler Spencer has been promoted to office assistant to the president of the Seaboard Air Line, at Norfolk, Va. A native of the Eastern shore of Virginia, Mr. Spencer entered the service of the

W. Tyler Spencer

Seaboard in 1914 and has served in various capacities. At the time of his recent promotion he held the position of special representative in the president's office.

Alfred D. Wolff, Jr., research engineer of the New York Central system at New York, has been appointed assistant vice-president.

FINANCIAL LEGAL & ACCOUNTING

Roy G. Bundy, whose appointment as tax commissioner of the Chicago, Milwaukee, St. Paul & Pacific, at Chicago, was reported in the *Railway Age* of January 8, was born on December 20, 1884, at Whitewater, Wis. He graduated from the University of Wisconsin in civil engineering in 1909 and attended special courses in the Marquette University College of Law from 1917 to 1919. Mr. Bundy first entered railroad service in the summer of 1906 as an axeman and rodman in the engineering department of the Chicago, Milwaukee & St. Paul (now the C. M. St. P. & P.), and after graduation from college in June, 1909, became assistant engineer, maintenance of way, with the

Roy G. Bundy

Northern Pacific at Spokane, Wash. In December, 1909, he left the N. P. to work for the city of Spokane as an inspector for the city engineer, and in September, 1911, he returned to the Milwaukee Road as an instrumentman in the engineering department at Milwaukee. He was subsequently transferred to the tax department at that point in October, 1911, as a clerk, advancing to chief clerk in February, 1913. Mr. Bundy was promoted to tax agent at Milwaukee in November, 1921, and, when the tax department was moved to Chicago in October, 1937, he was transferred in that position. He served as tax agent at Chicago up to the time of his recent appointment as tax commissioner.

P. N. Davis has been appointed auditor of the St. Louis, San Francisco & Texas (subsidiary of the St. Louis-San Francisco), with headquarters at Fort Worth, Tex.

OPERATING

F. A. Hansard, superintendent of the Ocala district of the Atlantic Coast Line, with headquarters at Ocala, Fla., has retired from active service at his own request. **J. L. Kennedy,** acting super-

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She doesn't wear chrome trim, and her paint is black, but she, too, is truly modern. She was built for a job — a modern job — and she does it well.

With planned scheduling she can stay on the road 16 and 18 hours a day, 27 or 28 days a month. With proper servicing — and such servicing facilities save more than they cost — she can be turned around in an hour or two. With her modern design, based on progressive engineering, her maintenance costs are low. And with equal attention, she — the modern steam locomotive — will give you more train-miles, more ton-miles, more passenger-car miles per year for each dollar of investment than any other type of motive power.

There is a place for steam, and in this place the *modern* steam locomotive is doing an outstanding job. We are continuing to build such locomotives.

LIMA HAMILTON CORPORATION

DIVISIONS: *Lima, Ohio* — Lima Locomotive Works Division; Lima Shovel and Crane Division. *Hamilton, Ohio* — Hooven, Owens, Rentschler Co.; Niles Tool Works Co.

PRINCIPAL PRODUCTS: Locomotives; Cranes and shovels; Niles heavy machine tools; Hamilton diesel and steam engines; Hamilton heavy metal stamping presses; Hamilton-Kruse automatic can-making machinery; Special heavy machinery; Heavy iron castings; Weldments.

intendent of the district, has been appointed superintendent. **J. L. Mears,** acting superintendent terminals at Jacksonville, Fla., has been appointed superintendent terminals there. Mr. Hansard was born at Talladega, Ala., on December 1, 1882, and entered railroad service in 1903 with the Birmingham Southern Terminal at Ensley, Ala., acting as yard clerk and switchman until 1904. In the latter year he went with the A.C.L. as brakeman, becoming conductor in 1905, trainmaster in November, 1922, and superintendent of the Ocala district in April, 1930.

G. F. Tedards, trainmaster of the Charleston & Western Carolina, has been appointed superintendent, with headquarters as before at Augusta, Ga. **J. M. Marsh** has been appointed trainmaster at Augusta. The position of assistant superintendent has been abolished.

TRAFFIC

Charles J. Hinger, passenger agent of the Illinois Central, at New Orleans, La., has been appointed district passenger agent at Houston, Tex., in charge of the district passenger office, closed during the war years and recently reopened.

Riley E. Davis has been appointed assistant general freight agent in charge of sales and service for the Mississippi Central, with headquarters at Hattiesburg, Miss.

W. J. Fillingim, regional assistant freight traffic manager of the New York, New Haven & Hartford, has been appointed general perishable freight agent, with headquarters as before at Boston, Mass.

Warren M. Greff, district traffic agent of the Illinois Central at Greenwood, Miss., has been transferred to Jackson, Miss., where he succeeds **Henry T. Lewis,** whose promotion to general traffic agent at that point was reported in the *Railway Age* of January 29. Mr. Greff is succeeded by **James S. Frost,** traffic agent at Memphis, Tenn.

Charles H. Gattis, assistant passenger traffic manager of the Seaboard Air Line at Norfolk, Va., has retired from active duty after 57 years of service. Mr. Gattis was born at Raleigh, N. C., on November 3, 1879, and entered railroad service on February 1, 1891, as clerk with the Associated Railways of Virginia & the Carolinas at Raleigh, N. C., serving in that capacity until May 1, 1895. He went with the Seaboard Air Line on June 1, 1895, and served successively as clerk and ticket agent, traveling passenger agent and division passenger agent at Raleigh, until February 1, 1910, when he became general passenger agent of the Georgia & Florida at Augusta, Ga. On September 1, 1914, Mr. Gattis became tourist agent of the S.A.L. at Raleigh and from April, 1917, to January 31, 1920, engaged in detached service under the United States Railroad Administration at various cantonments, directing troop movements. He was appointed assistant general passenger agent, S.A.L., at Norfolk on February 1, 1920; general passenger agent in April, 1931 and assistant passenger traffic manager on December 1, 1936.

W. F. Hoagland, district freight agent of the Pennsylvania at Canton, Ohio, has been appointed division freight agent at Norfolk, Va., succeeding to the duties of **Randolph B. Cooke,** general freight agent, who was granted a leave of absence until the end of the year, when he will retire after 44 years of service. **John B. Carey,** district coal agent at Boston, Mass., has been appointed district freight agent at Altoona, Pa., succeeding **G. A. Shaffer,** who moves to Washington, D. C., as division freight agent. Mr. Shaffer succeeds **W. K. Chapman,** who has been appointed assistant to the vice-president of the Central region at Pittsburgh, Pa.

MECHANICAL

Harry S. Marsh, whose promotion to superintendent—car department, of the Missouri Pacific at St. Louis, Mo., was reported in the *Railway Age* of January 8, was born on May 10, 1898, at Carlyle, Ill. He began his railroad career in August, 1915, as a car clerk for the Chicago & North Western and later served in various positions in the car department until May, 1917, when he entered the United States Army as a cavalryman. In September, 1919, he

Harry S. Marsh

returned to the C. & N. W. and worked in the car department until November, 1924, when he became assistant foreman for the M. P. at DeSoto, Mo. He was subsequently advanced through various positions to that of passenger car foreman at North Little Rock, Ark., in March, 1935, and to general car inspector at St. Louis in the following year. Mr. Marsh was appointed general freight and passenger car foreman at North Little Rock in September, 1940, and general car inspector at St. Louis in May, 1941. He was further advanced to assistant superintendent—car department at St. Louis in August, 1947, the post he held at the time of his promotion to superintendent—car department.

Charles Ormonde Butler, whose appointment as superintendent motive power of the Atlantic Coast Line at Fitzgerald, Ga., was reported in the *Railway Age* of January 15, was born on May 7, 1897, at Wilmington, N. C., and was graduated in mechanical engineering from North Carolina State College in 1922. He entered railroad service in June, 1922, with the A. C. L. In August, 1922, he went to Columbia University for special training, returning to the A.C.L., at Wilmington as machinist in January, 1923, and transferring to Waycross, Ga., the following month. In November, 1923, Mr. Butler was appointed shop inspector, becoming machinist on March 1, 1933; lead man on March 16, 1936; and gang foreman on October 4, 1937, all at Waycross. On July 1, 1938, he became night roundhouse foreman at Lakeland, Fla.; on June 16, 1939, day roundhouse foreman, and on August 1, 1941, general foreman. Mr. Butler entered military service in July, 1942, returning to the A.C.L. on December 28, 1946, as master mechanic at Florence, S. C., and transferring to Rocky Mount, N. C., on March 1, 1948, where he remained until his recent promotion.

PURCHASES & STORES

John E. Thraff, whose promotion to general storekeeper of the Great Northern at St. Paul, Minn., was reported in the *Railway Age* of January 8, first entered G. N. service in June, 1906, as a laborer at Willmar, Minn. He later ad-

John E. Thraff

vanced successively to the positions of storeman, clerk, general foreman, local storekeeper and division storekeeper, serving at Havre, Mont., Whitefish,

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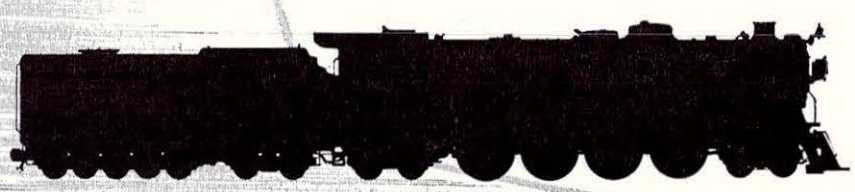
more profit from steam locomotive operation



Hundreds of steam locomotives now in road service are capable of giving many more years of really profitable operation if their efficiency is stepped up.

As shown by the experience of fifty railroads, steaming performance can be decidedly improved by installation of Security Circulators.

Security Circulators have the additional advantage of definitely lessening honeycombing, flue plugging and cinder cutting, thus making possible greater locomotive utilization and also affording a worth-while saving in boiler maintenance costs.

* * *

For nearly forty years American Arch has been designing and furnishing arch brick for coal-burning locomotives. Now American Arch has introduced the Security Dutch Oven to increase efficiency of combustion in oil-burning steam motive power, and installations have already been made in over two hundred locomotives.

American Arch Company Inc.

NEW YORK • CHICAGO

Judith Gap, Interbay, Wash., Hillyard and Gold Bar. He was later employed in the supply departments of the Pacific Car & Foundry Co., the Southern Pacific and the United States Shipping Board, returning to the G. N. in January, 1919, as storekeeper at Williston, N. D. He was transferred to Havre in September, 1922, as district storekeeper, advancing to assistant general storekeeper, Lines West, at Hillyard, in February, 1924. Mr. Thraff was appointed district storekeeper at Great Falls, Mont., in October, 1931, and assistant general storekeeper at St. Paul in April, 1942. He held the latter position at the time of his recent promotion to general storekeeper.

William B. Owens, whose appointment as purchasing agent of the Missouri Pacific Lines at Houston, Tex., was reported in the *Railway Age* of January 15, was born on June 15, 1900, at Longview, Tex. He was educated in the grade and high schools at Palestine, Tex., where he entered M. P. service on July 1, 1917, in the stores department. In 1922 he was transferred to

William B. Owens

Houston to serve in various clerical capacities until 1929, when he was assigned to a number of buying jobs. During the war period, Mr. Owens handled War Production Board orders and priorities and became chief clerk to the purchasing agent in September, 1945. He was serving in the latter position at the time of his appointment as purchasing agent.

ENGINEERING & SIGNALING

H. T. Sagert, formerly owner and general manager of a radio company at St. Charles, Ill., has been appointed radio-communication engineer for the Chicago, Rock Island & Pacific at Chicago.

H. B. Garrett, assistant signal engineer of the Southern Pacific at San Francisco, Cal., has been promoted to signal engineer at that point, succeeding **R. D. Moore,** who has retired after 49 years of service with that road. **F. D. Mattos,** manager of treating plants, has also retired after more than 43 years of S. P. service.

Charles H. Tobin, whose appointment as signal engineer and superintendent of telegraph of the Delaware & Hudson at Albany, N. Y., was reported in the *Railway Age* of January 8, was born on July 21, 1900, at Coeymans, N. Y., where he attended high school. After attending Albany business college, Mr. Tobin entered the service of the D. & H.

Charles H. Tobin

as signal mechanic at Albany in October, 1920. He was appointed leading signal mechanic in April, 1939; signal foreman in August, 1940, and signal inspector in October, 1942, holding the latter position at the time of his recent promotion to signal engineer and superintendent of telegraph.

Stanley G. Phillips, engineer maintenance of way of the Maine Central and the Portland Terminal, at Portland, Me., has been promoted to chief engineer of the Boston & Maine, the Maine Central and the Portland Terminal, with headquarters at Boston, Mass., and Portland, succeeding **Timothy G. Sughrue,** whose election as executive vice-president of those companies is announced elsewhere in this issue. **James W. Wiggins,** assistant to the chief engineer of the B. & M. at Boston, has been appointed engineer maintenance of way of the Maine Central and the Portland Terminal, at Portland, succeeding Mr. Phillips.

J. N. Smeaton, engineer accountant in the chief engineer's department of the Canadian National at Montreal, Que., has been appointed valuation engineer at Toronto, Ont., succeeding **F. C. Knight,** deceased.

J. W. Hale has been appointed assistant to chief engineer of the Atlantic Coast Line at Wilmington, N. C.

Frederick H. Lovell, whose promotion to engineer of bridges and buildings of the Central region of the Pennsylvania at Pittsburgh, Pa., was reported in the *Railway Age* of January 22, was born in Gosport, Hampshire, England, and received his early education in London. Mr. Lovell was graduated in 1913 from H. M. Dockyard Technical Institute at Portsmouth, England, and later took a post-graduate course at Kings College, London. He came to the United States in January, 1920, and, after service with

Frederick H. Lovell

the Bethlehem Steel Company and the Treadwell Construction Company, entered the service of the P.R.R. in 1924, as a draftsman in the office of the engineer bridges and buildings at Pittsburgh. Mr. Lovell became senior draftsman in 1928, was advanced to designing engineer in 1941 and to assistant engineer of bridges and buildings, of the Central region in 1942, in which capacity he served until his recent promotion. Mr. Lovell served in the British Army in World War I, leaving the service as a lieutenant of artillery.

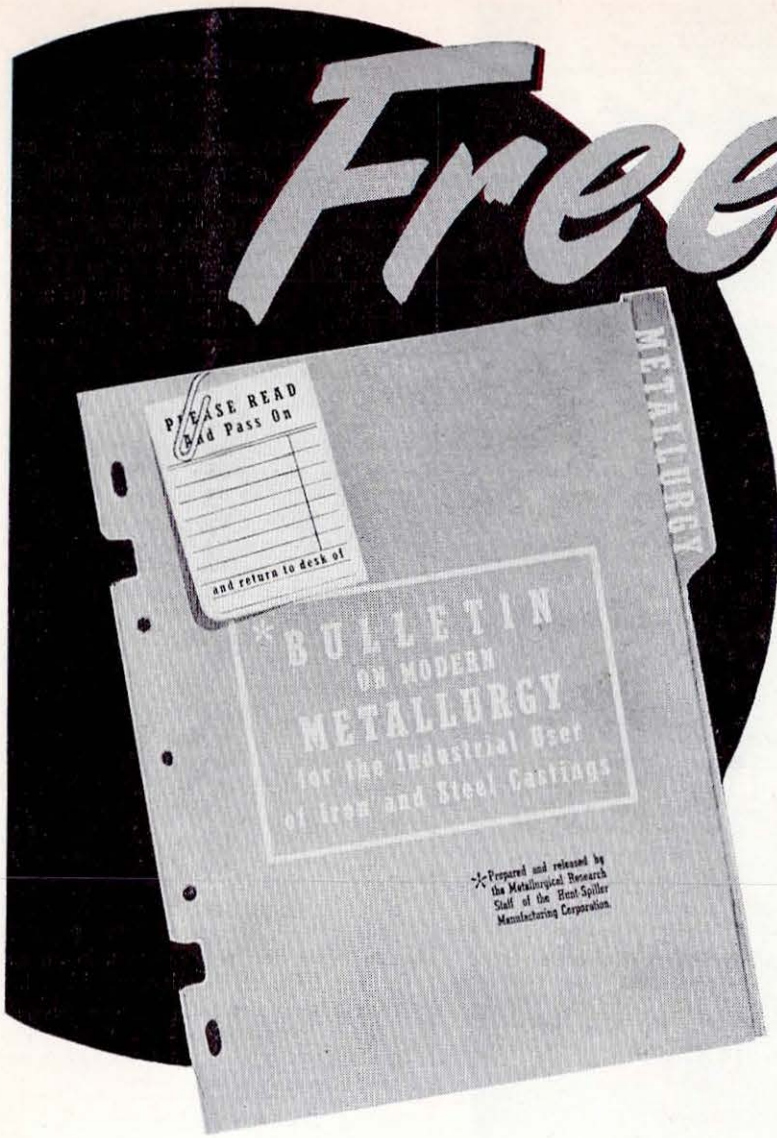
OBITUARY

T. S. Buzbee, who retired in July, 1948, as attorney for the Chicago, Rock Island & Pacific in Louisiana and Arkansas, with headquarters at Little Rock, Ark., died in that city recently.

Edward H. Friberg, who retired on June 1, 1941, as superintendent of telegraph of the Northern Pacific, with headquarters at St. Paul, Minn., died at his home in Seattle, Wash., on January 25.

Charles M. Lyon, manager of the mail, express, baggage and milk traffic departments of the Delaware, Lackawanna & Western at Hoboken, N. J., died on January 27 at Newark, N. J. Mr. Lyon entered Lackawanna service in June, 1897, as telegraph operator, subsequently serving as train dispatcher. At the time of his death Mr. Lyon was chairman of the Trunk Line-Milk Committee, secretary of the Trunk Line-Central Passenger Baggage Traffic section and president of the American Association of Baggage Traffic Managers.

News Department continued on next left-hand page



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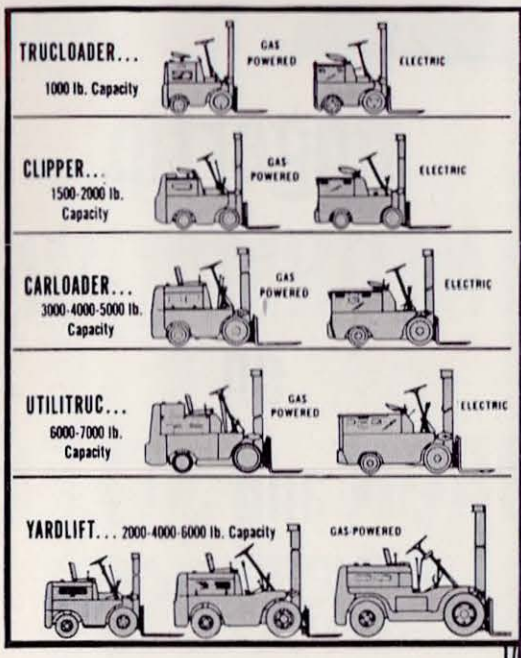

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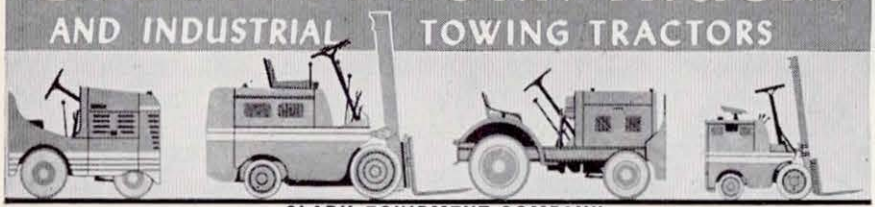

INDUSTRIAL TRUCK DIV., CLARK EQUIPMENT COMPANY BATTLE CREEK 24, MICH.
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AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

GENERAL NEWS

"Black Market" Hearing

(*Continued from page 334*)

looked over the trains out of New York and Miami, before space assigned to intermediate points had been occupied and, in support of his claim, produced statistics as to occupancy of trains, both north and southbound, at Rocky Mount, N. C., which he said was the point of peak occupancy in both directions.

M. M. DesChamps, chief of property protection for the A.C.L., stated that, last season, his special agents rode 221 trains out of New York and Miami, and, between January and April, 1948, his men interviewed more than 6,000 passengers. The result was 115 complaints, all of which were investigated, but none of the complainants were willing to give dates, names and places that would permit further investigation.

R. T. Jeffries, assistant general passenger agent of the F. E. C., at Miami, stated that he, and his opposite number on the Seaboard, had a standing offer to refund personally any black market premium paid for tickets if any passenger would make an affidavit identifying the racketeer. This offer has been in effect for many months, he said, but, so far, no one has taken advantage of it.

C. E. Bell, general passenger traffic manager of the Seaboard, stated that, last year, his railway had employed two detective agencies, in addition to its own police forces, in an endeavor to ferret out irregularities, but that, when complaints were investigated, the complainants became so vague as to dates and places that further investigation was impossible.

Railway Statistical Exhibits

J. D. Makinson, passenger traffic manager, and W. J. Ficht, general passenger agent, both of the Seaboard, and G. L. Oliver, passenger traffic manager of the F.E.C., completed the railways' panel of witnesses. Each of these, as well as those previously mentioned, entered a large quantity of exhibits as evidence. These indicated, among other things, that, before the 1949-50 Florida travel season begins, railways serving the area will have received most of the more than 100 all-room sleeping cars for which they placed orders in 1946, as well as additional streamlined coaches for reserved-seat coach trains. Railway witnesses were positive in their opinions that this will solve the "tight" situation created by the demand for Pullman room accommodations and that the new coaches, together with the charge for non-cancellation of coach reservations, will solve the demand for reserved coach seats.

Exhibits as to occupancy of trains during heavy travel periods showed that complaints as to passengers being unable to get the reservations wanted and then finding trains "half empty" are largely based on lack of knowledge of heavy loadings southbound at such points as Philadelphia, Baltimore,

Washington and Richmond; and northbound at resorts in Florida other than Miami, as well as at Jacksonville, Savannah, Ga., and Charleston, S. C.

Hearings will be continued at Los Angeles, Cal., on February 28.

Douglass Confirmed for N.M.B.

The Senate on January 31 confirmed President Truman's appointment of Frank P. Douglass for a new three-year term as a member of the National Mediation Board. The appointment had been reported favorably from the Senate committee on labor and public welfare on January 27.

Judge Douglass' new term will expire February 1, 1952. He has been a member of N.M.B. since 1944.

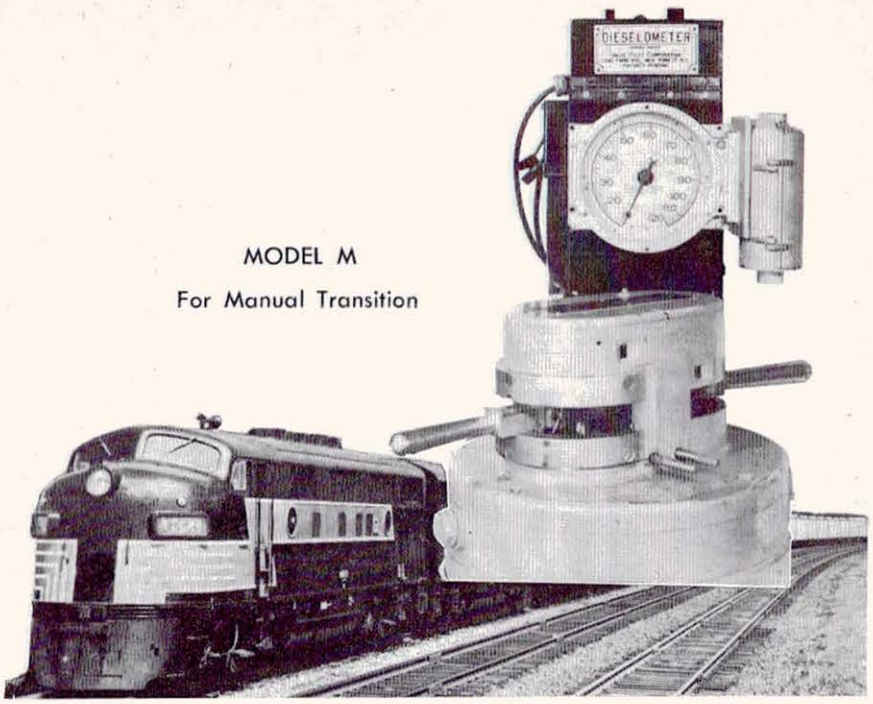
I.C.C. Sets Dates for Further Hearings in Ex Parte 168 Case

Hearings on the railroads' Ex Parte 168 petition for a freight rate increase of 13 per cent will open before Division 2 of the Interstate Commerce Commission on March 1 at Washington, D. C. The proposed increase would supplant the interim advance of 5.2 per cent which was approved by the commission in its report on December 29, 1948 (see *Railway Age* of January 8, page 242).

The Washington hearing, to be held at the auditorium of the Department of Commerce, will be followed by five regional hearings as follows: March 14, Chicago; March 21, Salt Lake City, Utah, and Montgomery, Ala.; March 28, Oklahoma City, Okla., and San Francisco, Calif. The commission's announcement of February 1 also said that oral argument will be heard May 16. Meanwhile briefs for all parties will be due May 2, and reply briefs will be received until the date of the oral argument.

The Washington hearing, as the announcement put it, "will be primarily for the purpose of developing any changes in the situation since the prior hearings in November and December, 1948," and of receiving some evidence from protestants. The railroads and intervening petitioners "will be expected to present the latest figures available showing traffic, revenues, expenses, and earnings together with their best forecast for the year 1949." They "may also present any desired further evidence with respect to the reasonableness of increased rates and charges for protective service." (No interim increase was authorized in the charges for protective services, i.e., temperature-control services, to perishable freight.)

With respect to protestants' evidence at the Washington hearing, the commission's announcement said that it should include presentations "of a general character"; evidence as to specific commodities in eastern territory, including the Pocahontas region; evidence "bearing chiefly on interterritorial relations, as far as practicable"; and evidence as to rates on coal, coke, and iron ore, nation-wide. The announcement also



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urged that all testimony of shippers with respect to rates on grain, forest products, livestock, fresh meat, and packing house products, be presented, "so far as possible," at the Chicago hearing; and that all testimony with respect to rates on petroleum and petroleum products be presented at the Oklahoma City hearing. Parties expecting to offer evidence either in the form of oral testimony or verified statesentms, should notify the commission by February 25 for the Washington hearing, and by March 7 for the regional hearings.

Dismissal of Out-of-State Rail Suit May Affect Many Cases

The Illinois superior court at Chicago last week dismissed a $90,000 personal injury suit filed against the Southern Pacific by a switchman who sought damages in connection with an accident which occurred 2,300 miles from Chicago. The decision may affect hundreds of similiar out-of-state suits pending in Chicago courts.

The suit was filed under the Federal Employers Liability Act, which holds that cases may be heard at any place where the employer conducts business. The court pointed out, however, that the S. P. does not operate any railroad or maintain any tracks within 1,000 miles of Illinois, but maintains only an office in Chicago for the purpose of soliciting freight and passenger business. The employee, the court said in its 14-page opinion, filed the suit in Chicago with the idea of winning a larger verdict than he could obtain in his own immediate locality of Albany, Ore.

The railroad won dismissal of the suit under the principle of *forum non conveniens*, which means that a court may, because of considerations of convenience to the parties or to the court, refuse to hear a case even though it is otherwise properly before the court. In support of this contention, the S. P. observed that hearing of the case in Chicago would require that 14 witnesses be transported some 2,300 miles, and housed and fed by the railroad for about two weeks. These expenses, including pay for work time lost by witnesses, would approximate $3,700, which would not be recoverable as costs even in the event of a victory by the railroad.

C. P. R. Outlines Improvement Plans in Rate Increase Plea

Announcement by the Canadian Pacific of a tentative long-term $310-million program of improvement to its tracks and other fixed properties, plus a reported multi-million-dollar capital program for motive power and rolling stock, was the outstanding development of recent hearings before the Board of Transport Commissioners at Ottawa, Ont., on the pending application of Canadian railroads for a 20 per cent increase in freight rates.

Otherwise, the second and third weeks of the hearings, the opening of which was reported on page 48 of the *Railway Age* for January 22, appear to have developed little except differences of opinion between railroad representatives and attorneys for the various provinces which are opposing the increase as to the type of evidence the railroads should be allowed to present.

The first such argument developed over a demand by M. A. MacPherson, counsel for the province of Saskatchewan, for particulars of C. P. R. expenditures on maintenance of way and structures over the past two years, to determine "whether what has been spent on maintenance has been properly charged to the freight dollar, or whether it should be capitalized or charged to deferred maintenance." F. C. S. Evans, C. P. R. general counsel, objected to a study of company records for such particulars, on the grounds that it would take a long time; that S. J. W. Liddy, assistant comptroller of the company, had already been questioned on the subject, and that if vouchers on maintenance were to be examined the physical work would also have to be studied. Chief Commissioner M. B. Archibald declined to direct an examination of railroad records at this time, but said he felt the matter should be "thoroughly cleared," and indicated that he might call for a study of the records unless the material was made available voluntarily.

The Canadian Pacific's subsequent announcement of its tentative long-range property improvement program was attacked by provincial counsel as an attempt to revise the basis of the company's case for higher rates; Mr. MacPherson suggested that it was designed to put the company in position to apply for a new rate increase in 1950. Both charges were denied by railroad lawyers, as was the contention that the program would add $13 million a year to the road's maintenance charges. The tentative program, as announced by C. P. R. Vice-president N. R. Crump and attorneys for the company, and exclusive of expenditures for new equipment, is as follows:

Description	Total Am't	1950-1954	Bal. after 1954
	(000 omitted)		
ROADWAY:			
Rail & fastenings	$96,500	$42,500	$54,000
Grade & line revisions	19,131	12,631	6,500
Ballasting	34,844	11,500	23,344
Track extension	5,835	2,208	3,627
Grade separation	3,900	1,575	2,325
Signals	31,741	13,801	17,940
Bridges	5,080	2,335	2,745
Tunnels	500	....	500
Road machinery	1,140	770	370
YARDS AND TERMINALS:			
Additional yards	37,325	20,475	16,850
Commercial facilities	2,100	1,050	1,050
Rail-water facilities	23,145	10,095	13,050
BUILDINGS:			
Office buildings	9,875	6,875	3,000
Freight sheds	8,940	2,990	5,950
Shops	15,591	8,452	7,139
Shop machinery	8,000	4,000	4,000
Miscellaneous	6,685	5,985	700
Total	$310,332	$147,242	$163,090

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Current Publications

PAMPHLETS

1949 *Directory of Occupational Safety Posters. Published by National Safety Council, 20 North Wacker Dr., Chicago 6. Price, 50 cents.*

Contains illustrations of 744 different safety posters which are designed for use in various industries and occupations related thereto and which will be available for purchase from the National Safety Council during 1949. It is the culmination of the council's 35 years' experience in publishing posters directed toward shaping worker attitudes. Included is a convenient index for locating posters pertaining to specific accident hazards.

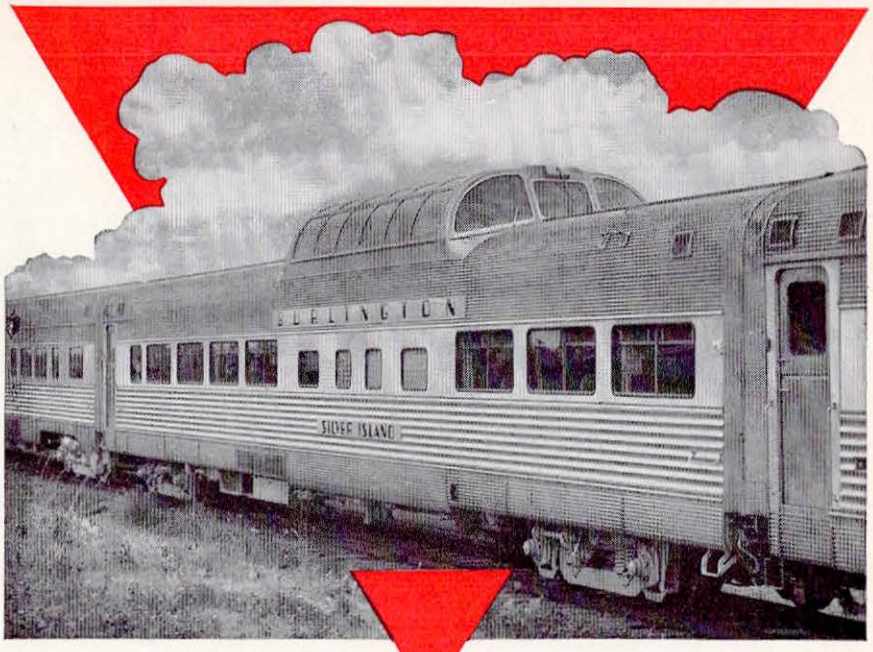
Memorandum of Increased Rates and Charges as Published in Tariffs X-162-A and X-166-B. 12 pages. Published by freight traffic department, Union Pacific Railroad, 15th and Dodge sts., Omaha, Neb. Free.

A memorandum tariff of rates and charges applicable as a result of Ex parte 162 and 166 freight-rate increases. Includes an alpahabethical list of stations, by states, showing the percentage group applicable; a chart showing the percentage increases as authorized in master tariffs X-162-A and X-166-B; an alphabetical list of commodities treated with specific or maximum increases, including charges for accessorial services; a consolidated increase table on commodities other than grain and those on which maximum increases are provided; a consolidated increase table on grain and grain products; an increase table applicable to rates on commodities accorded specific or maximum increases, and an insert map of the United States showing boundary lines of the various increase territories. Supplement No. 1, reflecting changes and additions occasioned by the issuance of the new composite master tariff X-162-B and X-166-C, effective February 15, is currently under preparation so that the original booklet may be kept current.

Applications of Electricity to Railways, 1947. Prepared by Edmund A. Freeman, assisted by Douglas A. Stephenson. 44 pages. Published by the Bureau of Railway Economics Library, Association of American Railroads, Transportation building, Washington 6, D. C. Free.

A bibliography of periodical articles on railroad electrification, locomotives (Diesel-electric and electric) and electrical apparatus and equipment appearing in a select list of periodicals. An appendix contains bibliographies on communications and signaling.

(*Continued on page* 130)



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TRADE PUBLICATIONS

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Presents a complete photographic trip through the Cedar Rapids (Iowa) shovel-crane plant of this company, including action photographs with descriptive captions of the offices and shops of the plant and views of the finished products in operation.

The R. C. Mahon Company, What We Produce . . . How We Produce It . . . Our Capacity to Serve Industry. 36 *pages. Published by R. C. Mahon Company,* 8650 *Mt. Elliot ave., Detroit* 11, *Mich.*

A picture story of the seven divisions of the company, covering its activities, products, services, operations, and capacity to serve industry and commerce.

Dearborn De-Ionizing Systems for Pure Water at Low Cost. 20 *pages, illustrated. Published by Dearborn Chemical Company,* 310 *S. Michigan ave., Chicago* 4.

Tells what de-ionizing systems are and how they work, presents diagrams of two-bed and four-bed systems, discusses the theory of silica removal by ion exchange, offers data on design and operating costs, and gives typical specifications for de-ionizing equipment.

"Gunite" Concrete. Bulletin No. 8, *eight pages, illustrated. Published by Gunite Concrete & Construction Co.,* 1301 *Woodswether rd., Kansas City, Mo.*

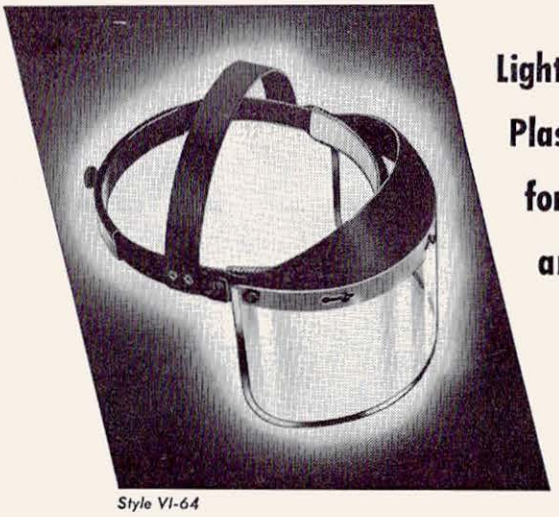
Explains what "Gunite" concrete is, discusses its physical characteristics, adaptability and advantages, and contains photographs and drawings illustrating applications of Gunite in various types of construction and maintenance work.

To Make a Long Story Short—Use Whiting Cross-Over Bridges. Bulletin MS-C-400, four pages, illustrated. Issued by Whiting Corporation, Harvey, Ill.

Describes, illustrates and contains specifications for three types of Whiting cross-over bridges, the overhead-rise, ground-level, and roll-away.

Bulldozing for Profits. 12 *pages, illustrations. Published by the Caterpillar Tractor Company, Peoria, Ill.*

This bulletin describes Caterpillar hydraulic and cable-operated bulldozers. Liberally illustrated with numerous action pictures, the catalog contains descriptions of such applications as heavy digging on stripping operations, backfilling drainage ditches, and land clearing and leveling.



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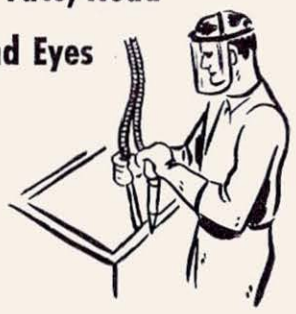

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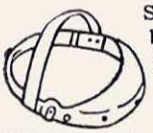

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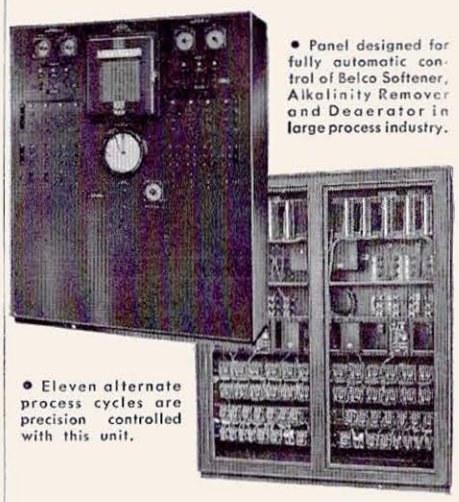

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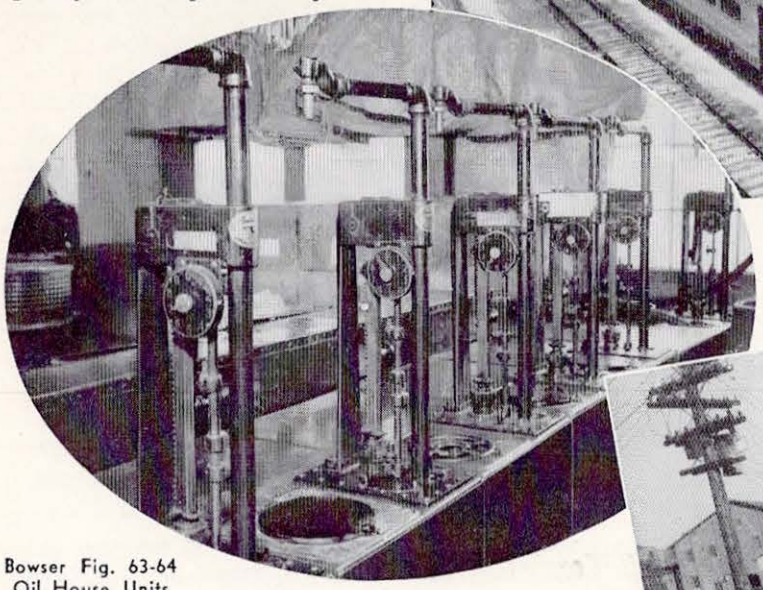
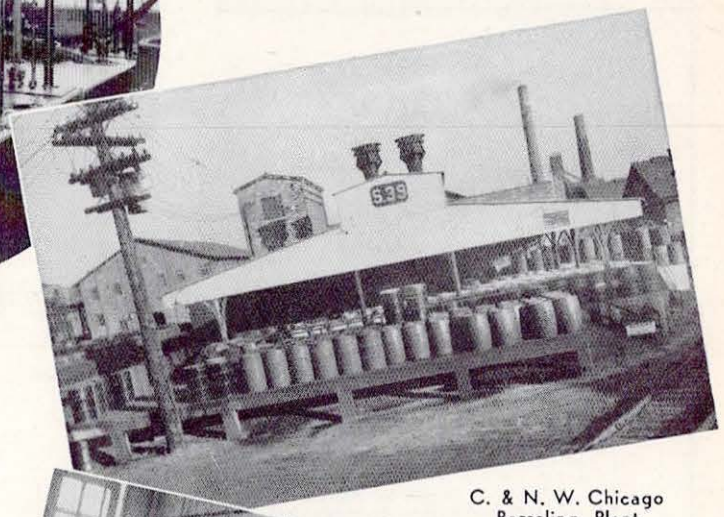


Bowser Fig. 63-64
Oil House Units



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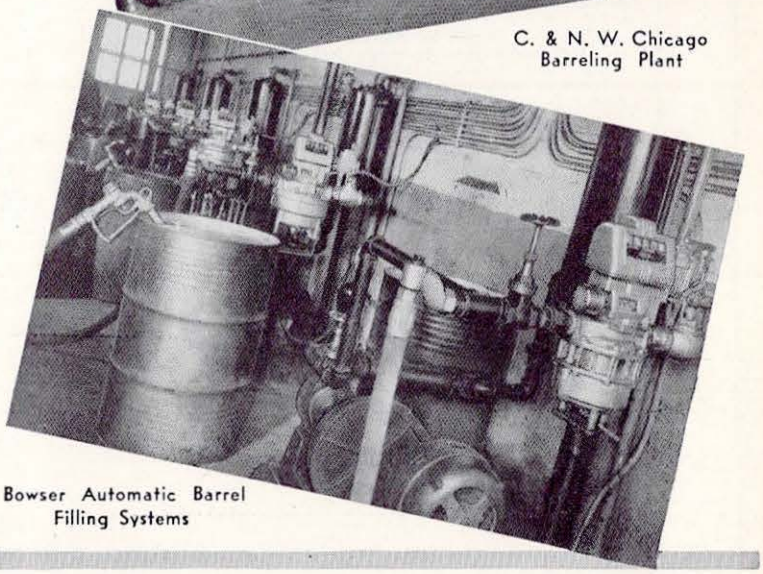

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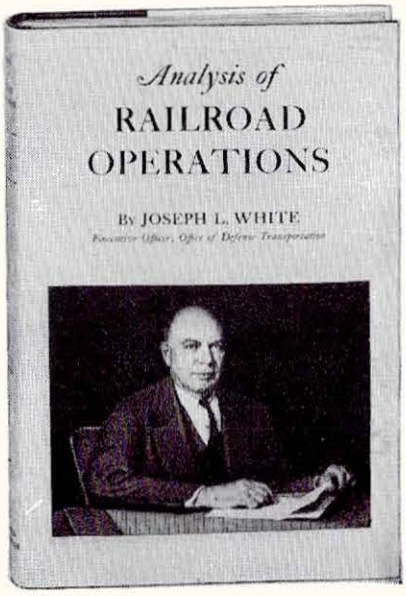

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Contents

Introduction—General Principles of Railroad Accounting—The Income Statement—Railway Operating Statistics—Railway Operating Revenues—Statistics of Freight and Passenger Service—Causes of Fluctuations in Operating Revenues—Railway Operating Expenses—Relation of Expenses to Revenues—Maintenance of Way and Structures—Unit Cost of Maintaining Road Property—Maintenance of Equipment—Account 314, Freight Train Cars Repairs—Unit Costs of Maintaining Equipment—Budgetary Control of Maintenance Expenses—Transportation and Miscellaneous Operations—Unit Costs of Operation—Statistics of Utilization of Equipment—Control of Transportation Expenses Through Current Reports—Traffic and General Expenses, Taxes and Rents—Analysis of Actual Operations of Two Class I Railways in 1941—Appendix A: The Accomplishments of the United States Railroad Administration in Unifying and Standardizing the Statistics of Operation, by William J. Cunningham, Assistant Director of Operation, United States Railroad Administration (1919). Appendix B: Pictorial Summary of the Principal Sources of Railway Revenues and the Causes of Expenses as Recorded in the Accounts.

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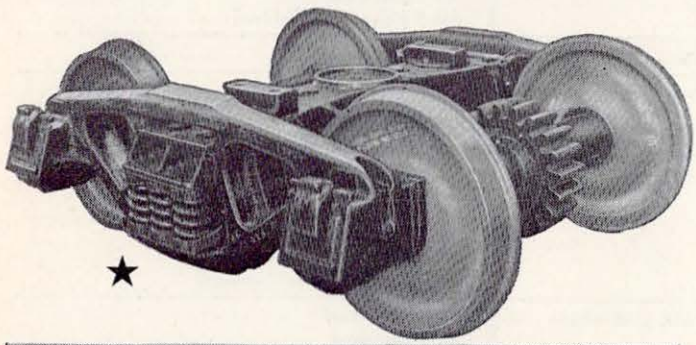

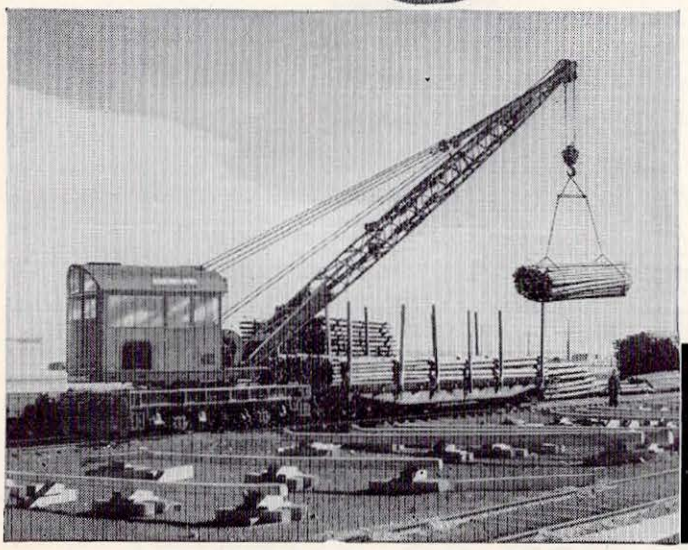

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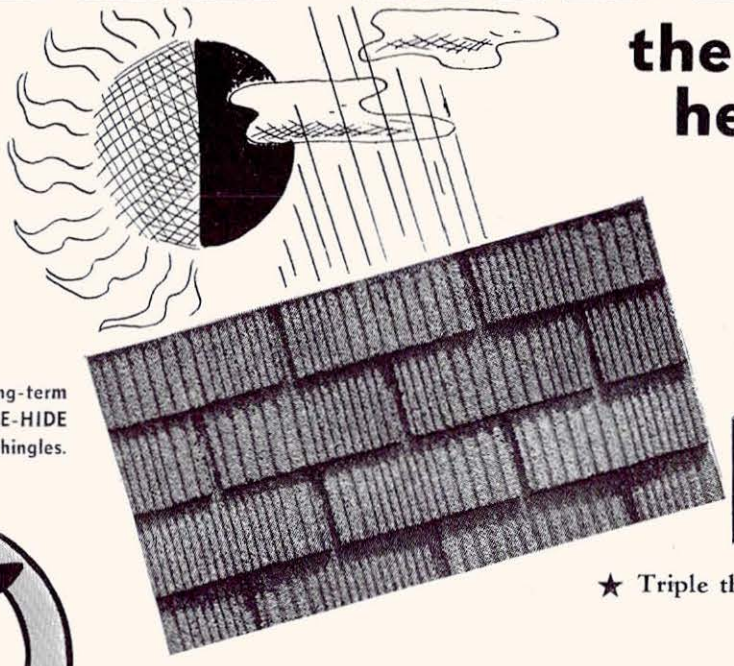

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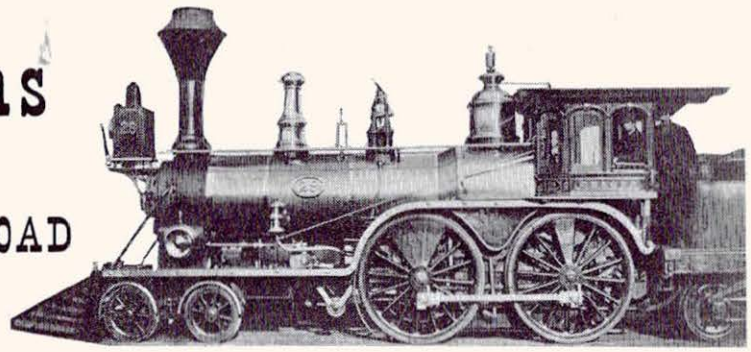

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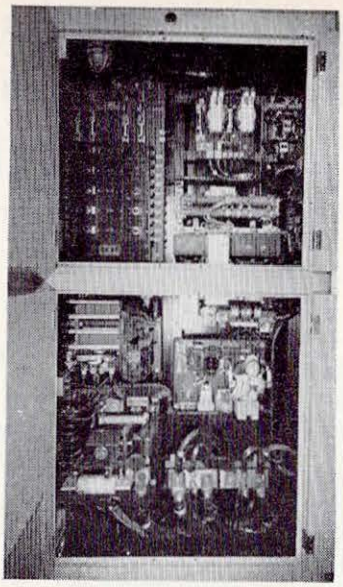

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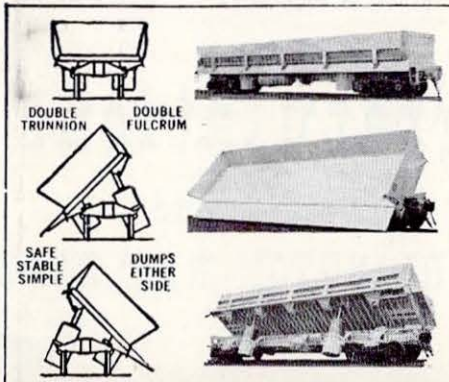

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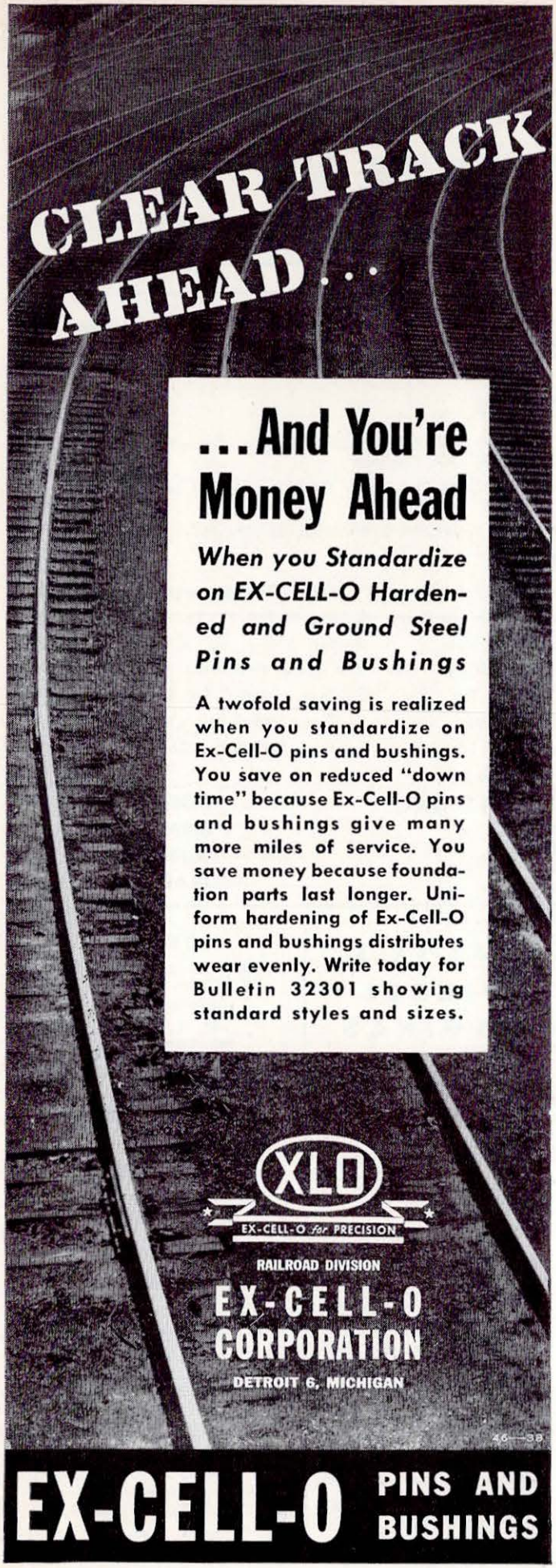
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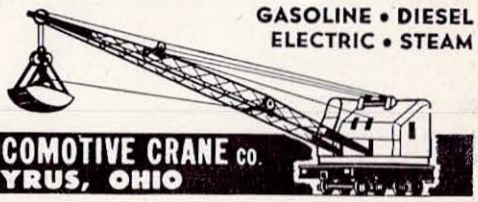

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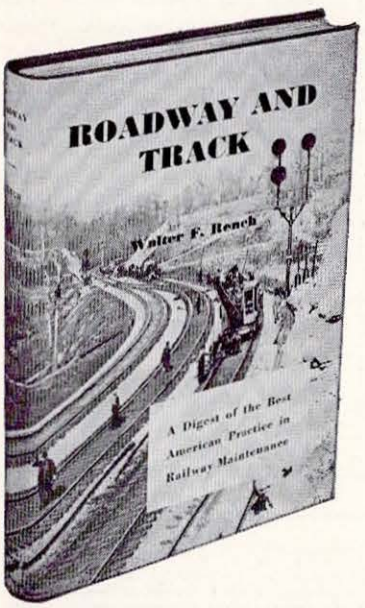

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In other words the average reader peruses both editorial pages and advertising pages with but one thought in mind: Is there something of interest or benefit to him?

Nowhere is this more true than in *business* publications. Here usefulness is the sole criterion, because the reader is in a wholly *business* frame of mind.

In business papers, advertising and editorial sections are welded together by a common purpose — that of offering business men ideas and means for attaining greater efficiency, cutting costs, speeding operations.

What does it matter to the reader where he picks up useful information as to methods or products so long as the words themselves offer tangible advantages that repay the effort of reading?

Maybe that's why some of the most successful advertising to be found anywhere today is appearing in the business press. Examples? The Associated Business Papers has just published a volume full — entitled "Copy that Clicks".

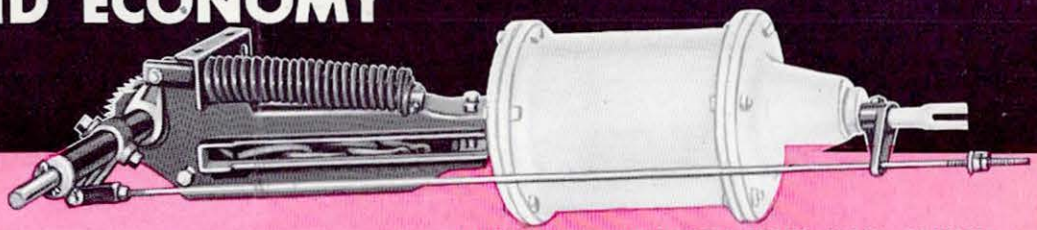
Write for your copy today on your company letterhead.

STEEL *in stock at* **RYERSON**

Thousands of kinds, shapes and sizes of steel are ready for quick shipment from Ryerson to any shop along your line. Call Joseph T. Ryerson & Son, Inc. Plants: Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City, Pittsburgh, Los Angeles, San Francisco.

BARS—carbon & alloy, hot rolled & cold finished
STRUCTURALS—channels, angles, beams, etc.
PLATES—sheared & U. M., Inland 4-Way Floor Plate
SHEETS—hot & cold rolled, many types and coatings
TUBING—boiler & mechanical, seamless & welded
STAINLESS—Allegheny plates, sheets, bars, tubes

AJAX FOR OPERATING EFFICIENCY AND ECONOMY

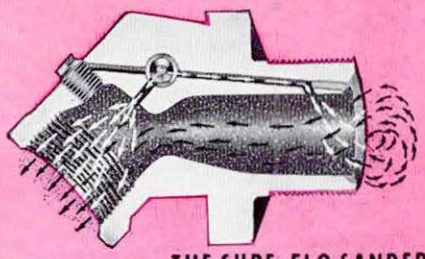


CONSOLIDATED *AUTOMATIC* BRAKE SLACK ADJUSTER

Outstanding features EASY to install . . . maintains HIGH BRAKE EFFICIENCY and predetermined piston travel . . . operated AUTOMATICALLY whether car is empty or loaded . . . compensates for "false" piston travel between empty and loaded car . . . no haphazard and hazardous manual adjustment necessary after brake shoes are renewed . . . SAFETY for employees, cars and lading — SAVES TIME.

The Ajax Power Hand Brake

has a record of performance and dependability *unequalled* in railroad service. Many exclusive features. world wide acceptance.



THE SURE-FLO SANDER

is the simplest, most dependable, most trouble-free sander ever installed on a steam, diesel or electric locomotive.

AJAX FOR PASSENGER COMFORT

ROTO-CLINE and DREAMLINER SEATS

Most railroads have selected these seats for 3 reasons 1. Solid passenger comfort . a service the road gives him he can *feel!* 2. Luxurious appearance. A service the passenger can *see!* and 3. *Economy!* A service we give the road that can't be felt!.

DA-LITE CONTROL BLINDS!

No single addition to a car gives it that *modern* touch like the addition of these distinctive blinds. Add Da-lite control blinds *only*, and modernization is half done! Individual control of sun-glare. Promote passenger comfort and good will!

Congratulations!

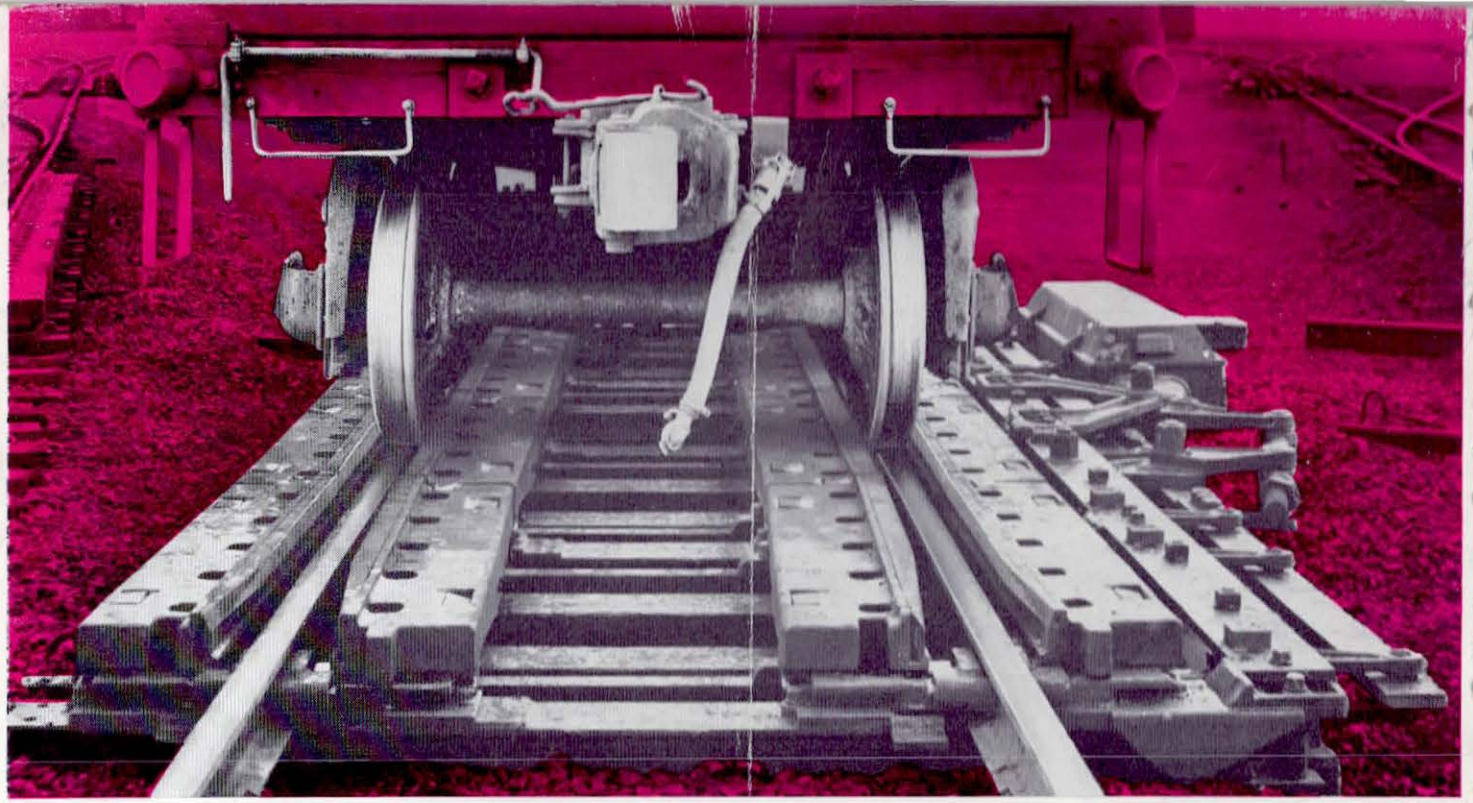
The Chicago, Burlington & Quincy Railroad Company celebrates its 100th anniversary this month. Congratulations, and best wishes to our many friends on "The Burlington!"

Ajax-Consolidated Company

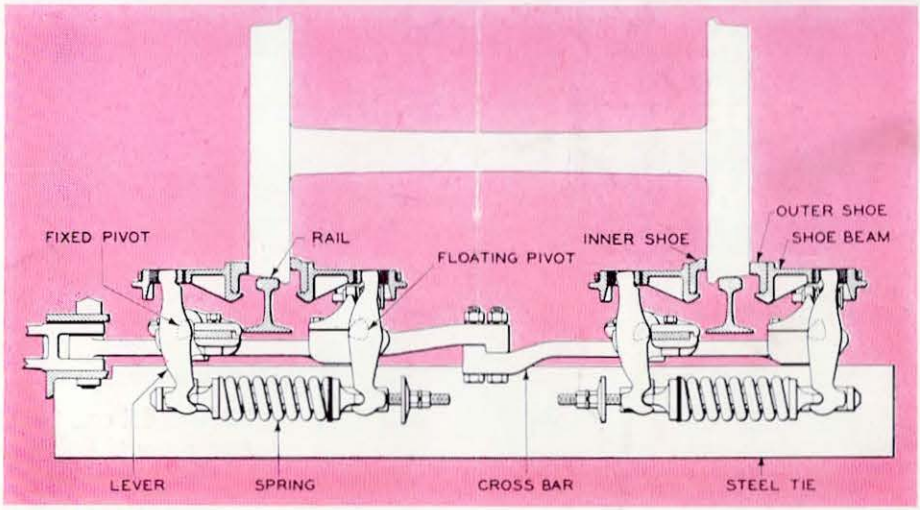
AJAX CONSOLIDATED COMPANY

4615 West 20th St. • Chicago 50, Illinois

NEW YORK • SAN FRANCISCO • PHILADELPHIA • *Representatives in principal cities*



LET THE SPRINGS DO THE WORK!



The **G-R-S Retarder** utilizes springs to apply pressure between the brake shoes and the car wheels. Pressure is always the same on both sides of the wheels regardless of variations in thickness of wheel or in spacing of wheels on axles. The springs cushion impact loads. Pressure is always available—ready to do the work.

The only power used is to *change* the degree of retardation. This means moving the cross bar which changes the distance between the fixed and floating pivots and thereby changes the spring pressure. The position of the pivots is held mechanically—no power is used for the actual retarding.

The G-R-S Retarder System is all-electric, affording greatest economy compared to other kinds of power. Power consumption averages about 0.07 kwh. per car handled. This includes operation of the retarders, switch machines and signals, track circuits, and control machine lights.

Consider G-R-S Retarders for reliable, economical operation of your yard. For more information, call our nearest district office or write for Bulletin 180.

GRS GENERAL RAILWAY SIGNAL COMPANY GRS
New York 17 Chicago 3 ROCHESTER 2, N.Y. St. Louis 1 A-2278